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For the Photographer and Kinematographer

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Why I Am a Pictorial Photographer

(Number Twenty-Four)

ALFONS WEBER, F.R.P.S.

TO answer this question, without including some other things than photography, would be rather difficult. About thirty years ago, I was painting and sculpturing. Never has art in any form tired me, although I must confess that the cubist-painters with their distortions and childish renderings are often beyond my understanding. At that time, I was fascinated by the speed and ease with which a camera could produce a marvelously life-like portrait or landscape. Several friends helped me decide on a 9 x 12 cm. camera as the most practical size. My photographs were sharp beyond criticism; but after a few months and a second camera, my enthusiasm was very low. I was greatly disappointed and later refused to consider photography as an art.

But about two years later, I had the privilege to see in our art school a special exhibit of large gum prints, platinums and other enlargements, which still linger in my memory as real works of art. It must have been a dozen times that a great force made me go again and again to see those marvelous pictures, and I was convinced that photography can be art in the hands of a master. The realisation of this fact is one reason why I use the camera to express myself.

A second reason, or rather excuse, I found later, when after years I had gained forty pounds. My profession did not offer sufficient exercise to keep me in graceful and slender figure, and I began Sunday-morning photo-hikes, from five to ten miles. This I have found very beneficial in the past years. Rain or shine, in summer and winter, out in the woods and forest preserve, I find the brook, the trees and birds, and all wonders of nature waiting for the camera. Here and there a pleasing composition or a striking shadow-pattern will be photographed. And so I get more out of a camera-hike than just photographs.

By this time I had become a member of four camera clubs, had received many medals and diplomas, and had exhibited in most of the salons in every part of the world, and now I have been admitted to Fellowship in the R. P. S. All my photographic work is done without any assistance of any kind. A tremendous amount of work, this is; but I enjoy every bit of it. In fact, this is not work to me, it is my ideal recreation.

In contrast to painting, I find it often a disadvantage not to be able to arrange the clouds in landscapes and the lighting of out-of-door subjects on account of lack of patience to wait for the correct moment. I make the exposure of the subject "as is", depending on placing highlights on the negative, reducing offending light-spots, and doing all kinds of handwork on my small negative, so that the printing will be a simple process.

In the last one or two years, photography has changed from extreme softness to sharpness again and now several times I read that the future trend is to be decided soon, whether all handwork should be omitted and only purely mechanical photographs be considered as art in Photography. So much is true—if I have time and patience to wait for the exact moment when all conditions are just right, I shall have a negative which will give a straight printed picture, instead of a mere photograph. Otherwise, only about five out of a hundred will not

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need any dodging or toning down. Winter and snow-scenes hardly need manipulation; but in summertime, when for days the sky is without any cloud, I cannot resist doing something to that blank sky, also reducing the contrast and making a few changes. I believe that such things are absolutely necessary to certain types of pictures.

A few months ago, I saw an Architects' Exhibition, where many of the most perfect prints were shown; but I cannot feel that this is art—it is simply superb mechanical workmanship without that dreamy personal quality which distinguishes a picture from a perfect photograph.

I have read almost every book on pictorial photography and digested the various opinions; but, after all, I shall go my own way and make my pictures for my own pleasure and satisfaction. When I see a negative which appeals to me in one way or another, I have a very definite idea how the finished print should be.

International salons I do not take too seriously. Accepting or refusing a print by one jury does not prove in absolute form the merit of a picture.

First Rochester International Salon of Photography

A. H. BEARDSLEY

IT is a matter of genuine satisfaction in pictorial photographic circles throughout the world that a group of sincere lovers of the artistic in photography had a vision and then had the courage and ability to make that vision become a successful reality. What could be more fitting than that Rochester, N.Y.—"the city that nurtured the photographic industry from its infancy"—should have an international photographic salon? It seems like the working out of what is termed poetic justice. Another significant fact is that those who have made the Rochester Salon a reality comprise a group in which technicians as well as pictorialists are represented. That is, photography in all its many branches is represented by those who have their finger-tips on the pulse of artistic and technical photography throughout the world.

Through the courtesy and co-operation of Mr. Victor Rayment, chairman of the Salon, and Mr. Alexander Leventon, vice-chairman—also of many of the exhibitors who sent prints for reproduction—I was supplied with the material for this review. It is a matter of regret that space does not permit reproducing all the splendid pictures which were received. We appreciate the co-operation of every exhibitor who sent a print, even though we did not use it. The Rochester Salon was made possible financially by contributions of members, the membership being open to all who were interested in having an international Salon of Photography in Rochester. Although many members of the organising committee belong to the Kodak Camera Club, the Rochester Salon is entirely independent of the Eastman Kodak Company, and its aim is purely artistic—to help the pictorialist.

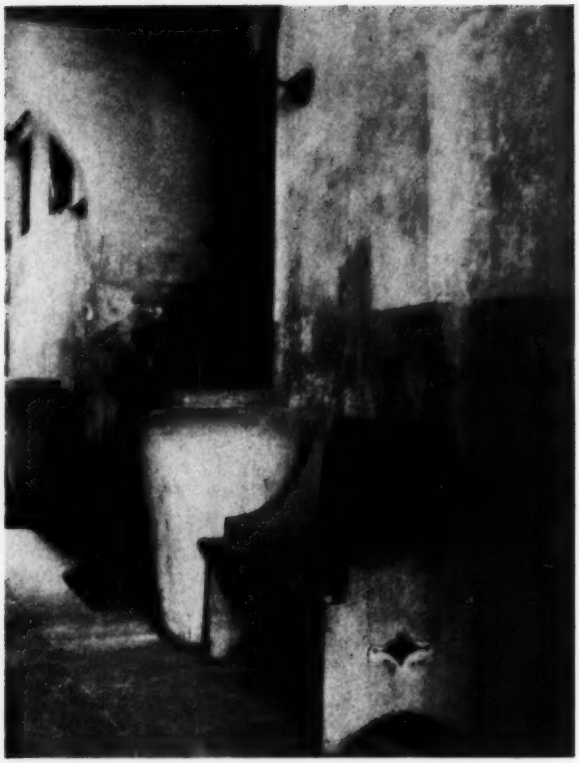
The Salon Committee consisted of Miss Gertrude Herdle, Director, The Memorial Art Gallery; Victor Rayment, Chairman; Alexander Leventon, Vice-Chairman; Miss Helen Williams, Secretary, and Walter S. Meyers, Treasurer. The other members of the committee were Franklin C. Ellis, Dr. K. C. D. Hickman, J. Harold Hudson, Boris Chudadoff, Donald McMaster, Glenn E. Matthews, and Dr. E. P. Wightman. The Jury of Selection consisted of William A. Alcock, New York City; Frank R. Fraprie, F.R.P.S., Boston, Mass.; James H. Mackay, Toronto, Canada. Each member of the jury was invited to exhibit four prints of his own selection.

Statistics, especially of a First Salon, are always of interest and value as a starting-point, and as a basis of comparison for future salons. Over 1,100 prints were contributed by 285 pictorialists, representing twenty-seven different countries. China, Japan, and Norway were not represented; but it is hoped that, this year, prints from these countries will be received. Out of the 1,100 prints received, 267 were selected by the jury for hanging. According to the records, 9,100 persons viewed the salon and an unusually large number of prints were sold. There was every indication of a greatly increased interest of the public and a realisation that photographs can be works of art and worth a high price.

Mr. Leventon, in his letter with regard to the salon, made special reference to a number of prints which were exhibited, and I am sure that our readers will be interested in his comments. Therefore, I shall quote from his letter:

"Of the American workers, besides those who were asked to send prints to you, the following in my opinion are worthy of mention: John

COASTING
HOWARD G. DINE
FIRST ROCHESTER SALON



THE STAIRWAY — WALTER S. MEYERS

FIRST ROCHESTER SALON

Allen's 'Golden Dawn', an extremely large and beautiful bromide of richest quality. The effect of the low sun reflected in shallow water is magnificent, and the brilliancy of the highlights by contrast with the totally black poles is perfectly extraordinary. Charles Archer's bromoil, 'Twin Spires', is equally fine, although entirely opposite in its tonal values. The effect of distance and haze are beautiful and the composition perfect. Joseph Bing's 'Visiting' and 'Passage at the Castle' are fine examples of this foremost bromoil worker's achievements. Blakeslee-Klintworth's 'Freckles' is funny; but, in my opinion, its 'fun' is almost a bit exaggerated. Sigismund Blumann shows his 'Self-Portrait', a fine-quality bromoil transfer and undoubtedly a fine likeness. Elmore C. Brauer's 'Door of a Thousand Mysteries' was much exhibited and reproduced and is a very fine thing. The title is ambitious and the picture lives up to it. Walter Collinge is represented by his 'Fairy Ring', an outdoor nude of great beauty, beautifully designed and superbly lit. Louis Fleckenstein's work is too well known to need much comment. His 'Young America' is a masterpiece. Laura Gilpin, one of the foremost women pictorialists of America, has three palladium prints of delightful quality. 'The Sport of Kings', by Franklin Jordan, is already quite famous, having been exhibited and reproduced. It is one of the best representations of motion and speed I have seen. His 'Garo' is a very powerful and impressive 'close-up' of a typical motion-picture Mexican villain. Hiromu Kira's 'Study-Paper Work' seems to be a hundred per cent. 'sure shot' with the juries and it certainly deserves it. A. Kono of Los Angeles is represented by three prints, of which 'The Three Gulls' is especially attractive.

"Ira Martin's 'Silly Boats' is a brilliant

NEW YORK PUBLIC LIBRARY ALVIN C. GREINER

FIRST ROCHESTER SALON

platinum print of delightful soft-focus quality and the composition leaves nothing to be desired. Of the three prints by McPhail, the 'Nocturne' is the best. His 'Solitaire' may be interesting as a stunt of imitating a bas-relief by superimposing a positive with a negative, but there is hardly any beauty in it. Nakamura's 'Cloud over the Cliff' is gorgeous, almost too beautiful to be true. Robert Officer has four prints hung. They are bromides of exquisite beauty. Dr. Pardoe's 'Waiting for the Train', which has probably broken all records of being exhibited, had delighted us once again. Jane Reece's work is unique and one would have a difficult task picking out her best print. She is represented by 'Interior', 'Song of Youth', and 'Lorado Taft'. H. Armstrong Roberts' 'Nursery Fantasy' was the best bit of humor in the salon. Dr. Ruzicka shows three prints, of which 'The Fishing-Boats' is probably the finest. John Skara's 'Brute' is very impressive and powerful, and so is his 'Iron Mask'. Kenneth D. Smith's 'Siesta' is to me one of his best efforts. It is much more than a perfectly composed architectural study; one feels that it is time for an afternoon rest. The sun just begins to go down, the streets are deserted, the 'siesta' is on!

"From England we have some of the finest masterpieces of the camera. To mention but the names is sufficient for those who follow the exhibitions and photographic publications: Bertram Cox, Alexander Keighley, Harold Leighton, Colin Unsworth, Dorothy Wilding, Angus Basil, Marcus Adams, and Richard Speaight. We were especially glad to see the work of Bertram Cox, who so seldom gives us the opportunity of this privilege. His 'St. Martins-in-the-Fields' is a triumph as a bromoil transfer. Keighley's prints are so perfect and so well known as to make it impossible to say

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DRIFTING DUNES — MARY RUTH WALSH

FIRST ROCHESTER SALON

anything about them except highest praise. 'An Eastern Parlor', is the lesser known of his four prints; but to me it appealed perhaps even more than the others. The perspective and the splashes of sunlight against areas of shadow are simply marvelous. Dorothy Wilding's 'Master Brook' is probably the most striking of her prints. Marcus Adams is another genius who is not very generous in exhibiting in our country. We were proud to have him with us. Richard Speaight's children pictures are worthy of highest praise. His interpretation of 'Pirie MacDonald' in full Scottish attire is, however, more curious than characteristic.

"Some of the finest examples of pictorial portraiture came from Germany. Hugo Erfurth's 'Portrait of a Lady' is a magnificent and noble portrait of a beautiful subject. Another German, Lothar Schroeder, has three gum prints of perfect composition and technique. The 'Game of Chess' is reproduced in the catalog, and the 'Reader of a Newspaper' is at least as fine. Italy is represented by A. Bologna and Dr. Corinaldi. The latter's 'Venezia' is a fine example of his work. The former has four prints hung, 'The Solitary Path' being perhaps the most beautiful. Berssenbrugge of Holland has two multiple-gum prints. His methods are very individual and the results are less photographic than anything we have seen. One may like them or not, but their strength and impressiveness are undeniable. Harald Lonnquist of Sweden is represented by a still-life, 'Aquarium', a print of fine technical perfection, but much less appealing than his delightful child studies. Drtikol of Prague shows two nudes, both of which are as good as anything he has done before, which is high praise. We were very happy to have with us Leonard Misonne of Belgium. His four prints were the pride of the salon. 'Village Rhenan' is reproduced in the catalog; but it was the 'Causette' that appealed to me most. The stereoscopic effect of the figures standing out against the background is amazing."

Mr. Leventon modestly refrained from referring to his own splendid exhibits—"Portrait of a Russian Boy", "Sergei Rachmaninoff", and "George Eastman". All three of these outstand-

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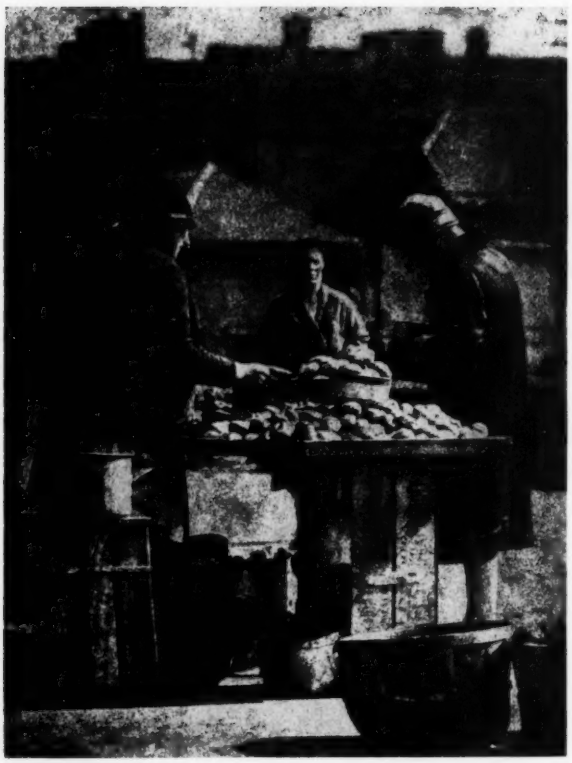
PORTRAIT OF A RUSSIAN BOY
ALEXANDER LEVENTON
FIRST ROCHESTER SALON



A MARKET STALL — A. R. BLACKBURN

FIRST ROCHESTER SALON

ing portraits have been reproduced in PHOTO-ERA MAGAZINE and are familiar to our readers. Furthermore, they have been hung at many of the leading salons in this country and overseas. The "Portrait of a Russian Boy" has been exceptionally honored by receiving the Stephen Tyng award from the Royal Photographic Society. Mr. Leventon has every reason to feel that his efforts have been appreciated and that his splendid portraits have given pleasure and satisfaction to all who have been privileged to see them.

With regard to judging and selecting salon prints, Mr. Leventon in his letter added some interesting comments which we quote:

"As is true in the case of nearly every salon, wherever held and by whomever conducted, prints are hung which do not seem to be worthy of the honor, and other prints which seem to merit recognition are rejected. When all is said and done, the judges of a salon make their decisions based upon their artistic and technical training. Furthermore, in most cases the selection of some prints and the rejection of others is a matter of the personal reaction of the judges. No matter how sincerely they try to be impartial and to recognise all schools of pictorial work, it is but human for them to select those prints which seem to them individually to be pleasing and made along artistic lines which they have adopted as their own pictorial yardstick. It should be remembered that probably no group of judges could select three hundred prints out of twelve hundred and then announce conclusively and finally that these three hundred prints were without question the best. After all, in justice to themselves and to the exhibitors, all they can say is, 'The three hundred prints are the ones which we as a group liked best.' If these same judges find a number of prints

THE BEAUTY OF AN AGED FACE
NANCY FORD CONES
FIRST ROCHESTER SALON

which they do not like, even though we might like them ourselves, it simply means that tastes differ in the matter of judging pictures, as they do in other activities of life. It it were not so, half of the fun of submitting pictures to salons and competitions would be gone."

Probably the selection of illustrations for this review may be subject to the same question that we have just mentioned; but we have selected those from the numbers sent to us by exhibitors which we felt would give somewhat of a cross-section of the prints which were exhibited at the salon. Obviously, we had to make our selection from those prints which were available and we did not have access to all the prints at the salon. It is just as well, because there were so many beautiful prints at the Rochester Salon that it would have been almost impossible to come to a decision as to which should be reproduced. And so we selected seven prints from those submitted to us and we feel confident that our readers will enjoy them with us.

A. R. Blackburn of Toronto sent two bromides for our selection, "Towering Elevators" and "A Market Stall". The former is a striking waterfront scene, with freighters unloading and a background of towering grain elevators. A fussy little tugboat in the foreground, with plenty of smoke and steam, livens the scene admirably. "A Market Stall" is a splendid outdoor genre which is typical and convincing. However, the third woman in the background appears to have a "stony face", expressionless and, therefore, seemingly out of harmony with the activity of the other two women who are busily completing a sale. Nicholas Boris of Hamilton, Ohio, sent us his print, "Sister Arts", which is a beautiful pictorial portrayal of two sisters, one an artist and the other a violinist, so grouped as to make a striking, poster-like effect. The "Trysting-Place", by Charles Clayton, Jr., is an attractive outdoor figure-study of a girl in costume, leaning gracefully against a tree near a river bank—an ideal trysting-place.

It is not given to many of us to see things with the understanding eyes of Nancy Ford Cones of Loveland, Ohio. Her print "Beauty of an Aged Face" does honor to the maker of the picture and to the model. There is beauty all about us, if we have eyes to see it. This portrait is outstanding and it teaches a great truth. Two other prints were hung at the salon, "Janie" and "Widowed". Neither of these did we have the privilege of seeing in the original; but the reproduction of "Janie" in the catalog revealed much of the artistic and technical quality which must be in the original. Howard G. Dine of Wilson, Conn., forwarded two prints for our selection, "Coasting" and "Tony". We could not resist the appeal of "Coasting". It portrays the spirit of youth and recalls to older folk those happy, carefree days when they were thrilled by "sliding down hill". The bluish-green tone of the original print lends itself admirably to the scene which it portrays. "Tony" is an excellent portrayal of an Italian type. Perhaps the swarthiness of the subject is slightly emphasised for effect, as "Tony" seems to be a bit too dark and forbidding in the original print.

Those of our readers who are familiar with New York, and especially that part of it near the Public Library, will appreciate "New York Library", by Alvin C. Greiner, himself from that city. The print possesses remarkable strength architecturally and is also one of the best outdoor genres that we have seen. It is no small task to include so many persons in a picture without apparently their being aware of the photographer's presence. Altogether, Mr. Greiner has succeeded in combining two difficult branches of photography. Byron Morgan's "Yes—we have no—!" or "Peasant Girl", as he called the print sent us, is an attractive genre depicting a pretty girl with a delicious-looking apple in her hand, obviously about ready to bite into it. It is one of the best studies we have seen made by this worker. "The Stairway", by Walter S. Meyers, is a still-life of much strength and appeal. At first, one might feel that more emphasis is placed on the bench in the foreground than on the stairway; but as one studies the print, the eye gradually but surely is led to the stairway, which is the center of interest and the real subject of the pictorialist. The picture is out of the ordinary and well done.

Richard Elwes Pope of Boston sent two prints "Winter's Flower Garden" and "Quiet", the former a decorative bit depicting ice-covered twigs in a pleasing arrangement, and the latter a snug little cottage which seemed to invite the beholder to enter and find rest and quiet. We are indebted to Thomas O. Sheckell of New York for his "Decorative Panel", which we immediately decided would make a splendid cover picture. The simplicity and strength of this decorative subject compels attention. "The Lone Boat", by T. K. Shindo, is a striking picture of a fisherman's dory, and its mooring chain caught as the wash of a wave left it momentarily held fast by the sands on the shore. The mooring chain is skillfully employed to lead the eye to the center of interest.

Dr. Max Thorek, F.R.P.S., contributed a splendid bromide, "Orientale", which portrays the head of an Oriental woman. The lighting on the sparkling veil and the pose of the head are

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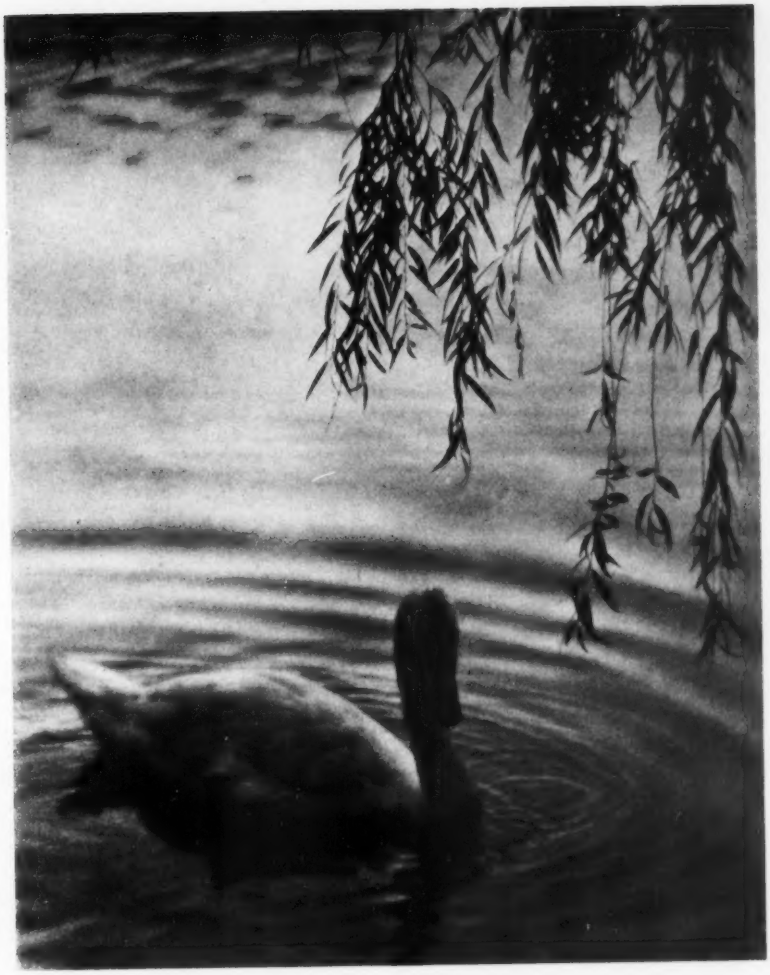

DECORATIVE PANEL
THOMAS O. SHECKELL
FIRST ROCHESTER SALON

done with Dr. Thorek's characteristic attention to detail and effect. It is one of the best heads that we have seen done recently by this gifted pictorialist. Mary Rush Walsh of Cambridge, Mass., sent three prints for our selection. "Path of Light" is a pleasing bromoil of a snow-covered walk through the woodlands. Its blue-green tone was striking and appropriate. "Snow Study" is a chloride print of the play of shadows on the snow and is delicately handled. "Drifting Dunes" is a bromoil and one of the best pictures we have ever seen depicting sand-dunes. There is a sweep to the sky and a suggestion of wind in the flattened sparse grass that tells a convincing story of the battle of elements on the lonely dunes. "The Frolic of the Shadows", by William O. Yates, is a splendid winter subject which is well in keeping with other pictorial work done by this pictorialist. The handling of the delicate shadows across the snow is beautifully done.

Again let me express my appreciation to those exhibitors who helped to make this article possible by their hearty co-operation, and I regret that we did not have space to reproduce every print we received. The First Rochester International Salon has become history and a foundation stone upon which salons of the future can be built with security and confidence. Those who had the vision and the courage to carry the First Rochester Salon to success are entitled to and will receive the support, co-operation and encouragement of pictorial photographers throughout the world. The great city which nurtured photography from its infancy has come to its own.

Architects, Sculptors, and Decorators as Salon-Judges

MAX THOREK, M.D., F.R.P.S.

A STORY is told of a famous naval painting once exhibited "on the line" in the Royal Academy of London, the artistic qualities of which elicited the unstinted admiration of critics and judges as well as the public favor. One day a sailor entered the academy, saw the famous picture, and laughed at it. The rigging of the ships was wrong and ridiculous! Now, it is safe to say that if that sailor had been one of the judges, this picture would never have been selected for hanging by him. He, as a sailor, could see only from his own point of view. The artistic subtleties of the picture, its color-effects, and the story which the composition told did not exist for him; he saw and knew only the sails, masts, and ropes. To judge that picture competently, he should have been possessed of an artistic sense and knowledge as well as his knowledge of rigging.

We have very much the same condition today in the United States in our exhibition-salons of pictorial photography. Not infrequently we have, as judges of this type of pictorial art, architects, sculptors, painters, interior decorators, and what not—men who are no doubt thoroughly familiar with the technique and the principles which govern their own particular lines of work and who judge accordingly of the work of pictorial photographers, but who are entirely incapable of competently judging of the really fine and subtle points on which artistic pictorial photography is based. Those men accept and award prizes to works which, judged from their own artistic standards alone, appear best to them. They reject others which, although perhaps of the highest degree of merit in the technique of pictorial photography, they are incapable of appreciating because they are not acquainted with the principles of that technique and are unaware of the difficulties which the camera artist has to meet in order to unfold his meaning with—shall I say?—his limited medium of expression. No doubt, very often, excellent photographic work is recognised and awarded distinction; but this I imagine is not so much because the type of judges of whom I speak really appreciate the photographic excellence of the work as much as its general artistic excellence. In fact, judging from the canons of pictorial photography alone, the pictures accepted and awarded high place in our salons often show an extraordinary deviation from any scheme of uniformity or even of that gradation in the scale of merit which one should expect in competent selection of works approximating each other in artistic photographic excellence. The real pictorial photographer, visiting one of these salons and examining the exhibits with a critical eye, finds himself in the position of the sailor in the academy; he has to laugh at some of the specially favored exhibits which to him are often full of glaring technical errors.

Let us take a glance for a moment at pictorial

photography as a special fine art. In this, as in every other true art, we must pay attention to what are called the unities. These the dictionary defines as a combination into a homogeneous artistic whole exhibiting oneness of purpose, thought, spirit, and style, with subordination of all parts to the general effect. Now such a definition is vague and may be interpreted differently and with a great degree of latitude. Indeed, when one sees some of the "jazz and modernistic" photographic monstrosities exhibited as pictorial photography in our salons and passed by supposedly competent and artistic judges, one may justly wonder whether the spirit of art has not, temporarily, at least, hidden beneath the mocking mask of Momus. But none the less, there are unities or broad essential principles in art, and the true artist—as well as the discerning public—always recognises them. And, in the particular art of pictorial photography, unities must be preserved and the special technicalities of this art must be developed so as to conform with them.

What are the unities in pictorial photography? In this short paper it is not possible to go into all of them; but one of the first canons of this, as of every true art, is that it must express some ennobling or worthy idea, and a second principle or canon is that it must be expressed in suitable or worthy manner. Every artistic piece of work must comply with these two canons. Often we see a sublime or beautiful idea, but its mode of expression is defective; thus one of the canons of art is defeated and the result is inartistic. Similarly, the most perfect technique will not make an unworthy subject artistic in any sense; and this is why I designate jazz subjects as artistic monstrosities.

In the question of the judging of pictorial photography, we must delve somewhat further into these canons of art. The choice of a worthy subject for pictorial endeavor does not call for special powers; anyone with a so-called "artistic temperament"—a recognition of the sublime or beautiful or of anything capable of appealing to the emotions—may easily find or conjure up such subjects. But, emphatically, the second canon of art—suitable and worthy treatment—does call for special talents; and it is by this canon especially that such works should be judged, because it is in this wise that pictorial photography differs from other arts.

None but the pictorial camerist knows how difficult it is and how many years of patient effort must be devoted to developing a technique which will enable him to express by the delicate nuances of light and shade in a monochrome what the painter can more easily achieve with his varied palette of colors. In pictorial photography it is, at times, very difficult and often almost impossible for the artist to convey his meaning in its entirety with the very limited means at his command; and when he succeeds in doing so it is, indeed, exasperating to have his work misjudged owing to failure of the judges to understand or appreciate such efforts.

Now it is evident that while all artists, architects, sculptors, painters *et alii* are presumably competent to judge of the fulfillment or otherwise of the first canon of art—the worthiness of the artistic idea sought to be expressed in any picture—they cannot, from the nature of things, unless they themselves are expert pictorial photographers, be competent to judge adequately of the excellencies of the subtleties of photographic technique. And thus, being deficient in judging of the second canon of art as applied to photography, they are not competent judges of the art of pictorial photography. The standards of technique in their own particular lines of art are not the standards in photography and their particular yardstick will not measure correctly dimensions to which it is not applicable.

As already stated, the result of incompetent judging works a great hardship to the pictorial photographic artist who has devoted his time, effort, and genius to the development of the subtleties of his medium of expressing the sublime and beautiful.

I, therefore, think it is time that this matter of the appointment of judges for only artistic photographic work should be changed, and that judges should be appointed from those who are recognised artistic pictorial photographers. Of these, there are many to select from. The awards of such judges would be accepted with respect, and their selections from works submitted for exhibition would be made with a much greater degree of discernment than some of the present salons exemplify. When one looks at the exhibits of European salons and compares them with those in the United States, one is struck with the evident superiority of the judging of the exhibits in the former. This should not be so, as our work here is, at least, as good as any abroad; and there is plenty from which excellent examples of the art can be selected.

Let us have judges who are not dazzled by jazz and modernistic monstrosities, and who, being capable and recognised artists in pictorial photography, understand photographic technique, its difficulties and possibilities.

[We feel indebted to Dr. Thorek for this article. He has had wide experience with the salons in all parts of the world. His suggestions merit careful consideration.—EDITOR.]

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Film-Slides for Modern Visual Demands

WILLARD D. MORGAN

DURING the last few years the widespread acceptance and use of the small cameras and projectors for making and projecting still-pictures on thirty-five-millimeter film has created a fascinating field for the film-slide worker. For a long time there has been an immediate demand for cheaper and more

FIGURE 1 WILLARD D. MORGAN

This picture shows the metal holder for the small individual film-slides, when they are to be projected in the standard-size Baloptican lantern. The holder shown in this picture was made for the Los Angeles County Visual Education Department for use in their Baloptican to demonstrate the possibilities of the smaller individual film-slides in the county schools.

A comparison is also made in this picture to show the relative sizes of the standard and smaller slides. This slide holder can be made out of sheet metal or cardboard. By having two of these holders in the slide-carrier it is possible to project the small film-slides in the same way that the larger 3¼ x 4-inch slides are shown.

improved methods for projecting still-pictures to supplement the excellent advantages of the common 3¼ x 4-inch glass slide. Such a demand has now been fulfilled with the film-slides, which contain twenty or fifty pictures on only a few feet of 35-millimeter non-inflammable motion-picture film.

The immediate application of film-slides may be classed into three main groups: (1) for use in the public schools and similar educational institutions to tie in with special visual education facilities, (2) for use in advertising and selling, and (3) for use in the home for entertainment or private showing. In the case of public institutions, the film-slides have been accepted to fill immediate needs for visual education material. A survey of the second application of film-slides shows that many manufacturers supply their salesmen with small portable projectors for use in traveling about the country when introducing new commodities to their customers. Film-slides for home-entertainment are a decided innovation for everyone interested in making pictures.

With all the modern possibilities of making and presenting pictures to the public, there is developing an increasing demand for wider applications of this powerful visual medium. Books, magazines, newspapers, advertisements, and the news reels in our theaters keep a constant flow of new pictures moving to the eagerly consuming public. Pictures are being considered by the educational world as the most positive and economical substitute for real experience. We can all recall numerous dull lectures and long study-hours which could have been saved by seeing a few dramatic and clinching pictures thrown upon the screen during our

FIGURE 2 WILLARD D. MORGAN

This picture shows the Bausch & Lomb double-frame film-slide attachment on the Baloptican projector. This attachment may be turned vertically or horizontally while projecting the film-slides. The lens-mount used for projecting the standard 3¼ x 4-inch lantern-slides may be seen adjacent to the projector. Below are shown a number of film-slide rolls which are used in this projector. A special mat may also be secured in this projector when single-frame film-slides are to be used.

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classroom hours. Fortunately, the progressive schools of today are adopting the visual education possibilities in all their departments.

Moderate Cost of Film-Slide Apparatus

This visual educational opportunity for the pupils in the classroom is very easily carried over into the home, where the young people are allowed to express their own ideas in preparing pictures for projection, for their own pleasure or for special entertainments. With the cost of film-slide cameras and projectors at such a reasonable figure, there should be no price barrier in obtaining equipment. The camera for making film-slides is also just as valuable for making any type of photograph for the family album or for enlarging and using to illustrate a magazine article. The cost of film is so low that hundreds of pictures can be made for one dollar or more. Motion-picture film can be obtained at any price, from two to twelve cents per foot, and with the Leica camera eight pictures are made on each foot of film, and twice that amount can be made with the single-frame camera.

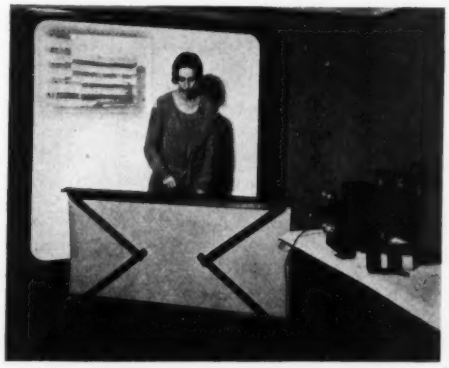

FIGURE 3 WILLARD D. MORGAN

The Arrow Bead Screen is easily set up for use in the home or in the schoolroom. In this picture the large bead screen in the background is six feet square . . . made especially for projecting the double-frame film-slides either vertically or horizontally.

This picture was made at night with a 1000-watt electric light shining directly upon the screen. The picture on the screen was projected by the Bausch & Lomb double-frame film-attachment on a standard lantern-slide projector . . . during the ten-second exposure of this picture. This gives a very good idea of the brilliance of the Bead Screen and also the power of the 500-watt Baloptican projector.

In the foreground is a Bead Screen being raised . . . the back is seen in the picture. To the right is the Leica double frame projector.

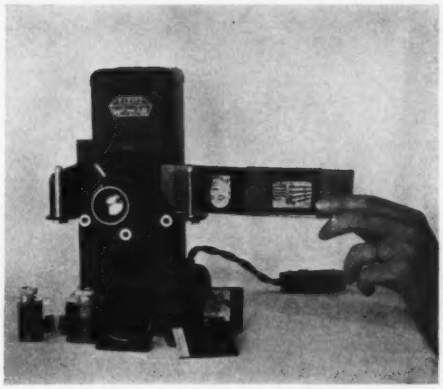

FIGURE 4 WILLARD D. MORGAN

Showing the film-slide rolls, single film slides, and special film-slide carrier for the Leica projector.

There is a wide field in which to select cameras and projectors for film-slide work. With the single-frame projectors, the Memo and Sept cameras may be used for making the negatives. Positives may also be made from regular motion-picture subjects where special still-pictures are selected from the reels. In addition to the single-frame equipment, there are the double-frame cameras and projectors manufactured by E. Leitz, Inc., of New York, who make the Leica camera and the "Uleja" projector. A new entry into the field of double-frame cameras is the Q. R. S.-DeVry camera, which is much larger and not so compact as the little Leica camera. In selecting film-slide equipment, there are special advantages to be considered in every camera and projector.

For my own film-slide work, I have been using the Leica camera and projector as well as the special printing and developing apparatus sold by the Leitz firm. My selection of this equipment was governed by a number of factors. In the first place, with the Leica projector, printer, and "Reelo" developing tank, I could use or prepare either the single- or double-frame film-slides, without having to duplicate my equipment. The double-frame positive is one inch by 1½ inches and permits twice the amount of light to pass through it during projection. Consequently, the screen image is large and brilliant, especially so when the Arrow Bead Screen is used. Another advantage of this double-frame apparatus is that a clear, well-defined image may be projected either on a small screen or on a large auditorium screen twelve feet in height.

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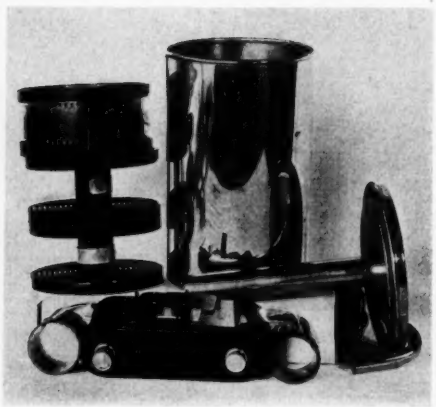

FIGURE 5 WILLARD D. MORGAN

The compact film-slide printing and developing outfit made by E. Leitz, Inc.

Knowing that the cost of apparatus and operation is so extremely reasonable, our next step will be to study the possibilities of obtaining the finest quality film-slides. For those who have never tried developing their own pictures, I may say that there are no mysteries to this fascinating part of the camera worker's art. Good results may be expected from the start, provided the few photographic essentials are observed.

A New Film-Slide Development

Recently I have worked out a special feature with my Leica projector which gives many new possibilities for the amateur as well as the professional user of film-slides. In modern visual educational practice, there is a growing tendency to show only a few well-selected pictures during a class period. In many cases, where I have visited schools and talked with visual directors, only one or two slides are used during the period. With such a selective demand on projected pictures, I found that the long strips of film-slides did not fit into the program of these special requirements; yet there was the immediate demand for projection-slides and apparatus which would be inexpensive, extremely light, portable, and allow for any combination of the slides. Thus a group who were studying about Mexico could use half a dozen slides on the costumes of the people and the next day a selected slide group on the native festivals. In each case, only the required number of pictures were presented. On the other hand, with a long film-strip of thirty to sixty pictures on Mexico, the temptation arises to show too many pictures at one time.

The Individual Film-Slide

In working out a solution for these specialised demands, I have prepared an individual slide 2 x 1 5/8 inches as standard size. As this size is just one-fourth of the 3¼ x 4-inch glass lantern-slide, it is possible to cut the glass slides into smaller sections and make positives direct on the glass slide or use the clear cover glass for mounting positive non-inflammable film-slides. A strip of film-slides can be quickly cut up and secured on these small glass mounts with the usual lantern-slide binding tape. Only one piece of glass 2 by 1 5/8 inches is required, with the positive film-slide mounted on one side and the emulsion side next to the glass to insure complete protection. A protective varnish may be applied to the back of the mounted film-slide for additional protection when the slides are to be used many times.

A special slide-holder can easily be made to contain two of these small slides for use in the Leica projector, which is the only film-slide projector which can be easily adapted to this change. In preparing the projector for use with the special slide-holder, the glass pressure-plate is left in its forward position and the film-roll holders and the mat slide are withdrawn. If any light shows from below the slide frame when placed in position, a small card about 2 x ¾ inches in size can be slipped down in place of the mat slide which was withdrawn. The double slide-holder can be 6½ inches long, 1¾ inches high, and ¼-inch thick. Three grooved wood-holders are fastened to a thin metal strip of sheet steel ¼-inch wide. More rigid all-metal holders can also be made.

In using the mounted film-slides in the Leica projector, it is possible to obtain any combination desired when giving an illustrated lecture or when showing only a few special pictures in the classroom or in the home. One slide can be showing while the other is changed. The small slide may be left in the projector for a few moments or for half an hour without any danger of overheating. A positive picture 1¼ by 1¼ inches is the largest size which can be used in this Leica projector, although a slightly longer picture can be used, if it is made narrower. By removing the film-slide mat in the Leica projector, the full aperture of the lens is utilised, and consequently a slightly larger positive can be used.

In making the 1¼ x 1¼-inch positives, process-cutfilm can be used instead of safety motion-picture film. Any negative larger than the Leica 1 x 1½-inch size can be reduced in the

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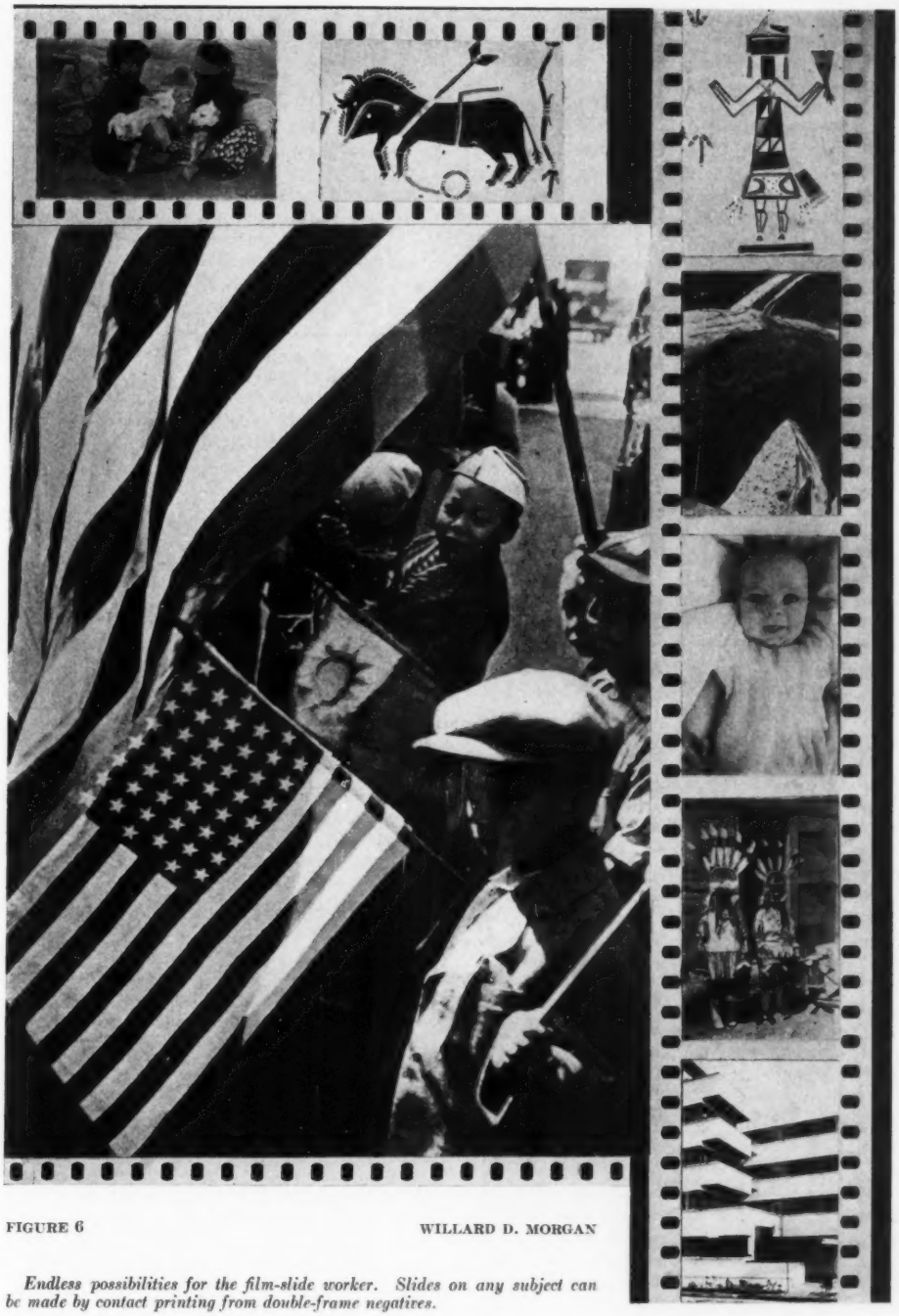

FIGURE 6 WILLARD D. MORGAN

Endless possibilities for the film-slide worker. Slides on any subject can be made by contact printing from double-frame negatives.

enlarging camera and projected on the film or direct on the quarter-size lantern-slide plate. This process permits the use of any grade or make of lantern-slide, cut-film, or motion-picture film stock. I have produced some of my clearest film-slides by reduction from 5 x 7 and 8 x 10 negatives in the enlarging camera. If the enlarging apparatus is not available, good results may be obtained by using the Leica camera and the special reproduction stand for copying photographs or small objects. The negatives can then be converted into positives by direct contact printing. When the positive is made on the lantern-slide emulsion, it is necessary to either varnish the slide or place a cleared piece of cutfilm over the picture surface for protection.

Film-slide rolls as well as individual film-slides can be projected in the standard 3¼ x 4-inch Baloptican projector by using regular attachments made for the purpose. The Bausch & Lomb Optical Company makes an excellent double-frame projector attachment which is quickly interchangeable with the regular lens-mount used for lantern-slide projections. An added advantage with this double-frame attachment is that the full power of the 500-watt light creates a brilliant image when it is necessary to project the film-slides longer distances. There is a special groove in this Baloptican film-slide attachment for inserting the small individual film-slides. The regular film-strips are easily passed through the projector by a turn knob.

Another method of projecting the individual film-slides is by using special holders inserted in the regular Baloptican slide carrier to hold the smaller slides. Such holders are easily made out of sheet metal or even heavy cardboard. The special film-slide holder, as shown in the accompanying illustration, was made for the Los Angeles County Visual Education Department to use in their Baloptican projector in demonstrating the possibilities of the individual film-slide in the educational program. In this same illustration a comparison has been made to show the relative sizes of the standard and smaller slides, all of which may be used in the same lantern-slide projector.

Additional Advantages of the Single Film-Slide

An important feature of this individual film-slide is that vertical as well as horizontal slides may be placed in the carrier and projected without turning the front lens-mount around, as is the case when the long film-strips are used with vertical and horizontal pictures. In this way it is not necessary to make the vertical pictures smaller in order to squeeze them into a fixed space, as in the single-frame slides, which are 1 by ¾-inches in size and cannot be turned during projection. In mounting the positives on glass for the Leica double-frame projector, the exact position for centering the picture can be obtained by making a test slide first and using it as a standard for the others.

In order to test the breakability of these small individual film-slides mounted on glass, I took a handful of them and tossed them across a fifteen-foot room, where they landed on a hard-wood floor. Strange as it may seem, not one slide broke. Even if the glass mount did crack, it would be a simple matter to replace with a new glass if the positive is on the film part of the slide. The outcome from a similar test with the large 3¼ x 4-inch lantern-slides would be a sad result with the first toss.

Filing the Single or Strip Film-Slide

An excellent filing system can be arranged for these individual film-slides by making or securing small boxes to hold about 50 or 100 slides, together with special index cards. Each index card contains a small contact print pasted in one corner and a number which corresponds to the same number on the slide in the set. The remaining space on the front and back of the card is used for special notes about the particular slide, such as locality, historical data, or general description. By using such a convenient filing-system, any slide with its accompanying description can be quickly found for any special purpose. When running through the index cards, the small contact print on each card gives an excellent idea of the slide, so that it is not necessary to handle every slide when making a selection for special home-entertainment, in the classroom, or for some selling or advertising plan in the business world. With such a filing-system, students are encouraged to arrange their own film-slide series for presenting before the class on some special subject or report.

This same filing-system may be used when the film-slides are prepared in groups on film-rolls. There are definite advantages in using either the single film-slide or the group of ten or twenty pictures on the long film-strip. In each case the subject will determine the particular method to use in preparing film-slides.

Quality in the Film-Slide

As the film-slides become more generally used in every branch of modern education and entertainment, there is likewise an increasing

demand for higher quality from the technical side as well as from the composition and subject angle. There are many film-slide strips on the market today which are practically worthless when subjected to the visual educational demands of progressive educators. Some of these film-slides which I have reviewed were the most anæmic, washed-out positives I have ever projected. Their main difficulty was due to such a flatness when projected because of the thin, underexposed positives. Such work can be avoided, and it really doesn't require an expert to obtain this quality. Any careful worker can produce film-slides which will be a delight to himself as well as his friends. Clean, well-prepared solutions, and a good printing and developing apparatus are the essentials for producing high-class positives on film-stock.

Recently I had the opportunity of projecting some film-slides from Germany, where this type of positive has become so popular. The rich dark-and-light tone-gradations were clean and sharp without any excessive loss of the intermediate values so vital to a perfect projection-slide. Overexposure, underexposure, and an excessively contrasty developer are to be avoided when preparing good film-slides.

Developing to Fit the Projection Screen

Before going into the developing details of film-slides, special consideration should be given to the type of screen used for projection purposes. The two extremes in projection screens are easily represented by the common linen sheet screen and the brilliant reflecting Arrow Bead Screen. In using the linen screen, it will be necessary to make more contrasty film-slides in order to obtain as bright an image as possible. The ordinary silver-coated screen is an intermediary between the linen and bead screen and produces satisfactory results. However, by using the glass-bead projection screen, your film-slides will show up to their finest advantage.

The Arrow Bead Screen gives a slight depth to the projected picture which makes some of the slides take on a stereoscopic effect which is especially valuable for certain subjects. As the Leica projector contains a 200-watt light, the illumination is utilised to its fullest facilities with the brilliant reflecting bead screen. When comparing the silver and linen screens next to the bead screen, the illumination appears reduced from one-half to one-fourth. Thus, with the bead screen, the greatest tone-gradation is possible in the projected film-slides, while with the linen screen it is necessary to eliminate some of the intermediate values in the positive by using a more contrasty developer.

Developing the Film-Slide

One of the most compact film-slide printing-and-developing outfits is put out by the Leitz organisation. Their "Reelo" developing tank and positive printer are carefully designed for the special purpose. A one-, two-, or three-reel tank may be obtained. Each reel will hold nearly six feet of thirty-five-millimeter film. If possible, extra reels should be obtained, so that the film can remain on the spool from the time it is printed, through the developing and fixing and final drying processes. In this way finger-prints, scratches, and dust-particles will be avoided. Correct developing, clean, strained solutions, and thorough washing will produce the beautiful film-slides you desire. When it is realised that a small picture one inch square is to be enlarged on the screen to five or ten feet square, special care during every process of film-slide making is essential to obtain perfect results.

Choosing a Developer

After experimenting with several dozen developers, including a number from the inner sanctums of several Hollywood motion-picture studios, I have concluded that the Eastman developers for positives can hardly be improved upon. The D-16 developer for motion-picture negative or positive film is excellent, and is prepared as follows:

Water (about 125° F.)	64	ounces
Elon	17	grains
Sodium Sulphite	5¼	ounces
Hydroquinone	350	grains
Sodium Carbonate	2½	ounces
Potassium Bromide	50	grains
Citric Acid	40	grains
Potassium Metabisulphite	85	grains
Cold water to make	1	gallon

Average time of development 7 to 15 minutes at 65° F. (18° C.)

I have also obtained good results with the borax D-76 fine-grain developer when using the Arrow Bead Screen during projecting. This developer seems to give a little more gradation of values, and the bead screen helps to produce the best illumination. For obtaining more contrasty film-slides, the D-11 developer is good; and, if extremely contrasty slides are desired, the D-9 Hydroquinone-Caustic developer is the ultimate. This caustic developer is perfect when making snappy film-slides of maps, line-drawings, or printed matter. By sticking to these few well-tested developers, any degree of contrast may be obtained in the positives.

Film-Slide Applications

As the making of film-slides can be done so cheaply, many possibilities open for amateur

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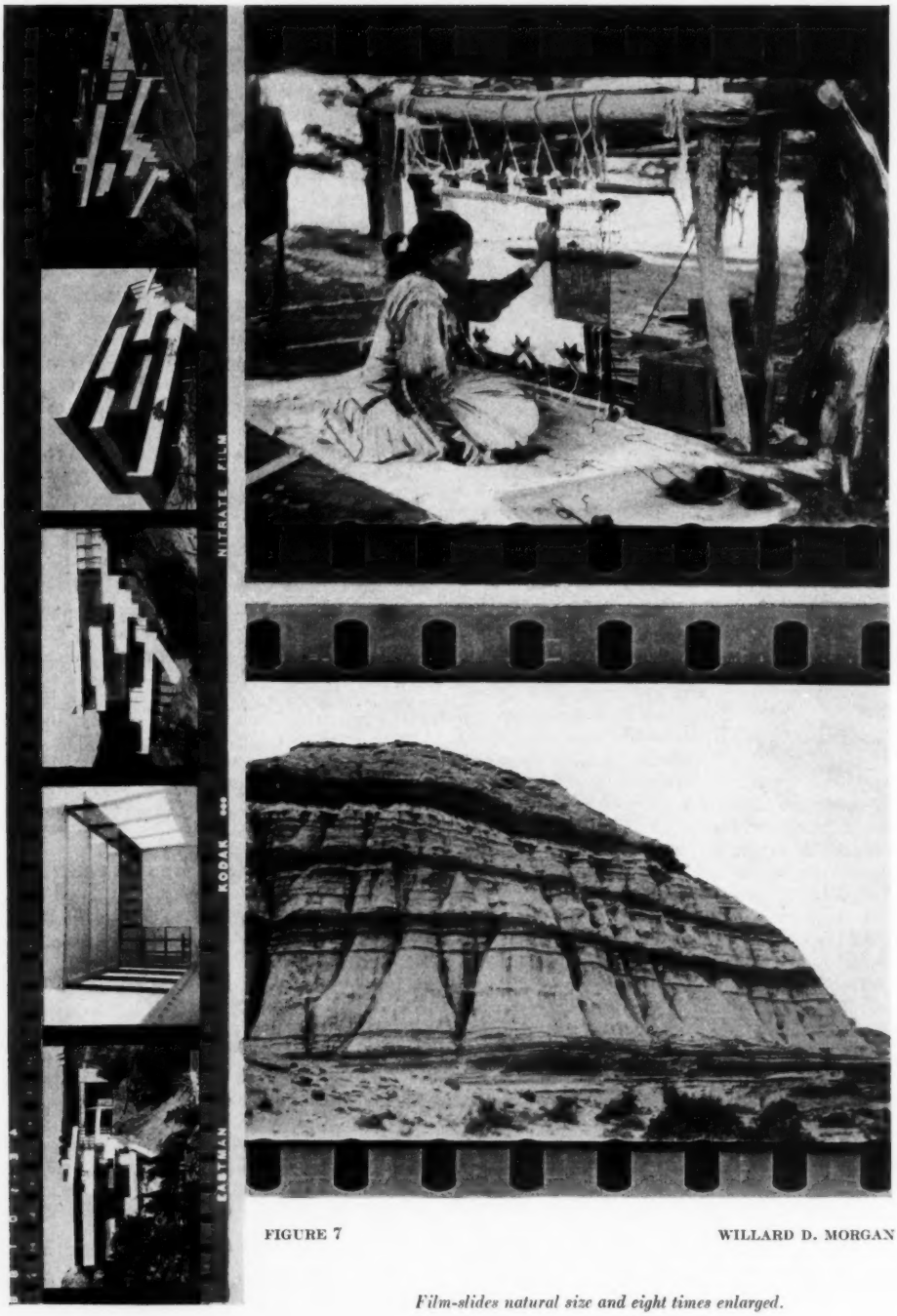

FIGURE 7 WILLARD D. MORGAN

Film-slides natural size and eight times enlarged.

and professional workers. By using a Leica or other small camera for making still-pictures on thirty-five-millimeter film, it is possible to photograph and prepare film-slide collections on any subject, from the native birds of a special locality to the summer-vacation trip with all its rich experiences. A film-slide collection will display real dramatic interest and produce a decided impact upon the memory of all who see the pictures.

When it is necessary to give a special lecture at the club, before sales conventions, or in the classroom, the projected film-slides will produce the clinching factor. If the Leica double-frame projector is used, these film-slides may be prepared in the usual film-strip form or in the individual slides previously described. Single- or double-frame film-slides may be purchased, covering interesting subjects from all over the world. By having such plastic possibilities available, any combination of pictures may be obtained and used whenever the occasion demands.

In comparing the costs of glass-slides and film-slides, it is found that one film-slide picture costs ½ cent and one glass 3¼ x 4-inch lantern-slide costs from 8 to 10 cents for the material alone, not counting the time for preparing it and later binding. Then, coupled with the added conveniences of lightness and unbreakability, the film-slides become even more valuable for filling the particular field in which they are used. Those interested in sports will find that pictures of special golf-positions, tournaments, archery forms, or even football plays, take on new possibilities for study on the film-slide screen. Microscopic pictures are easily obtained with the Leica camera and projected film-slides "throw up the image" to dramatic proportions. For private entertainments and parties, a special cartoon or pictorial feature may be presented with the film-slide outfit. The positives may be hand-colored to produce more natural effects when desired.

The film-slide is taking a definite place in the home, business house, or in the classroom, which cannot be fulfilled by the motion-picture or any other medium of picture-projection. Consequently, it should be considered as a distinct development to tie in with the lantern-slide projector, motion-picture projector, and the stereoscope. All are filling special fields; but the film-slide projector is opening a broader field among individuals who do not care to go to the excessive cost of more elaborate equipment when satisfactory results can be obtained with the smaller apparatus. The film-slide is meeting a need which is met in no other way.

Kilmer—Master Portraitist

JAMES OWEN

THIS avowed profession is that of a practicing physician, with a residence and office on the upper west side of Manhattan Island. He is a New York police surgeon and gets quite a thrill out of being a police commissioner over in Nassau County, Long Island, where his summer home is situated. But extra-curriculum and apart from his other degrees and honors, he is an M.P., which in this instance stands for Master of Portraiture.

Dr. Theron W. Kilmer's supreme hobby, avocation, and specialty is portraits of men, and strong testimony of his mastery of the art is found in the collection resulting from his work for many years past. His subjects have been professional men, principally physicians and surgeons, with a few bishops and high-ranking military men for variety.

In PHOTO-ERA MAGAZINE for November, 1925, he freely described his camera and studio-equipment, his method of working, and, in short, how he does it. Naturally, he had to tell it from the standpoint of the man behind the ground-glass. Concededly, that is a very important part of the story; but PHOTO-ERA readers may be interested to know how it looks to one of his subjects who experienced one of the photographic thrills of a lifetime in getting a close-up view of what the good doctor has besides mechanical equipment.

Having passed through his hands as a subject, we carefully reread his article and found that not a single detail as to apparatus or method of working was omitted. In conclusion, he wrote: "I have tried to give an accurate working account of the methods I have used for the past few years, and sincerely hope that anyone following them will have the pleasure and enjoyment that they have afforded the writer in his photographic work."

The account is painstakingly accurate and the

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Doctor conscientiously tried to tell how he does it; but he attempted the impossible. Light-control, camera, lens, sensitised materials, technique,—sure enough, all these are necessary and are artfully used; but the most elusive element in the making of a Kilmer portrait is the personality of Kilmer. We have listened to learned professors lecturing on psychology for photographers. In full justice it must be said that they probably knew what it was all about; but to observe it in practical operation in a sitting with Kilmer is better than hours of dry discourse.

If you have made an appointment, he is promptly accessible. From the first moment of his affable greeting, you realise that this making a portrait of you is an event, even if you are not a doctor, bishop, or general. You make leisurely, conversational progress to the rear drawing room used as the doctor's office. "Get the fellow talking about his pet hobby", wrote the wily rascal in his PHOTO-ERA article. "Just tell the man to hop up on your posing-bench and put his feet on the stool. He will invariably want to know what he shall look at, and how he shall sit. Just tell him that you do not want him to do anything for you, and that you do not care one bit what he looks at."

Not being much of a hopper, we sidled onto the bench and the conveniently placed footstool aided in assuming a comfortable posture. A battery of Cooper-Hewitts sputtered and a few feet away stood Kilmer alongside a huge camera as close as he could get to a Big Bertha Wollensak Verito set nearly at his own eye-level.

"There!" he said, "I don't know what you're looking at, but keep on looking."

"We have fallen under the benign influence of that idol of Buddha on your bookcase", we replied.

"Funny thing about that", chuckled the Doctor under the focusing cloth. "I took a chance on it at a church fair and won it."

The film-slide slid softly into place. Again his eyes in a half-closed squint were ranged alongside the Big Bertha. "O man, but that's you!" he said, softly smacking his lips as though tasting some choice morsel.

It was impossible to detect just when the silent shutter had responded to the bulb concealed behind his back; but it had opened and closed, because he had now stepped back to reverse the holder and repeat the performance. A running fire of animated conversation continued as he tried other lightings.

He may expose as many as six films, but rarely more than that, and among them will be *the one* of the outstanding quality that is a Kilmer portrait. You, reader, have seen his portraits in publications and in salons. He faithfully tried in print to tell the photographic world how he does it; but he neglected to mention the most important ingredient in the whole prescription. What Kilmer makes his big photographic medicine with, is enthusiasm. After thirty years' experience in photography, he retains the enthusiasm of the most recently infected amateur. Not only does he flood his subjects with violet rays; he drenches them with electrons of enthusiasm. His eyes sparkle in admiration as though the subject on the posing-bench had one of the noblest countenances he ever beheld. Squinting through half-closed eyes, he softly clucks his tongue between pursed lips as though he fairly tasted the lusciousness of the lighting he has managed with the simplest of accessories.

A simple rectangular head-screen controls illumination on one side; on the other, a sheet of tin-foil film-wrapper, casually held in position with an open safety-pin, throws light into a shadow. "Whoops!" he says. "A salon-picture! I'll exhibit this one as sure as you live."

And there you are. Where is the male who could resist looking pleasant at such a prospect? Cut back now to the 1925 PHOTO-ERA article, with the doctor proclaiming his innermost thoughts. "I truly believe that men are the vainest creatures living."

How he handles his medical sitters, military men, and clerics the present deponent is unable to state. To his medical colleagues he can speak in their own language and he doubtless can talk tactics to high-ranking military men.

As for churchmen, we should like to hazard the guess that he is far too shrewd a psychologist to talk theology. He probably tells them a good one he heard on Long Island last summer. Be that as it may, whatever he tells them contributes to the Kilmerian photographic interpretation of character, and that is the outstanding feature of his work.

Lights, lens, camera, film, manipulated by a human mechanic or even by the whirring motor of a metallic robot, will make a picture. What in the hands of some men is a mechanical task is translated by others into a high calling. Enthusiasm is essential to this translation in any trade or art; but photographic portraiture can only be raised to a high plane through the elusive medium of radio-active personality and knowledge of human nature, or psychology, if you prefer to call it that. It is these qualities and a constancy of enthusiasm sustained for many years that underlie Kilmer's masterly portraiture.

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GROUP OF PORTRAITS BY DR. THERON W. KILMER
(Dr. Kilmer himself is in the center)

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The Photographic Adventures of Bert and Ray

X—The Joy of Making Flashlights

NEIL WAYNE NORTHEY

"THIS is *some* day", said Bert, as he donned his slicker and prepared to start for the workroom in the basement of his friend's home, where Ray was to have been ready to observe with Bert one of their regular "camera days", the first Sunday in each month.

Bert opened the door and hied forth into the teeth of a beating April rain. Five minutes later he was shaking the moisture from his slicker in the workroom, where he had found Ray reading booklets and other literature that he had collected.

"Wow!" exclaimed Bert. "Listen to the rain pelting that window. Doesn't look much like outdoor work today, does it?"

"Not unless the rain lets up", replied Ray. "Rainy days may offer a chance to make unusual pictures, with reflections and umbrella-equipped pedestrians and all that goes with rain; but I believe we can find a *quiet* rainy day for such work."

"Well, what's on your mind?" asked Bert.

Ray pointed to the literature he had been reading.

"How about making some experimental flashlight exposures?" he asked. "Dark days and flash-powder were made especially for each other. I have some flash-sheets and flash-powder and magnesium-ribbon that I have been wanting to try out for some time."

"Suits me; but why all the array of flash-material? Isn't one kind enough?"

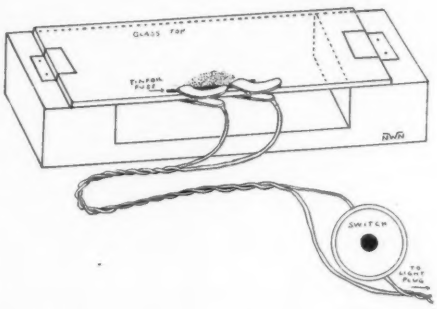
"Yeh, but I just wanted to try different kinds for different effects—flash-powder for quick work like making pictures of children that are likely to move, flash-sheets for slower, softer work like portraits, and magnesium-ribbon for maximum softness where length of exposure is no object."

"I don't understand", said Bert.

"It's like this", explained Ray. "Different kinds of flash-material burn at different speeds. If the subject is likely to move, a fast powder would be necessary to stop motion. But fast powders are likely to give contrasty negatives unless special care is used in arranging reflectors, diffusers, and such things. And so for portraits of people who are old enough to hold still we can use flash-sheets that require about a second to burn, because they give a softer result. Then, if we are making an exposure of an interior, and want to keep it from being too harsh by lighting the shadows, we can use a strip of magnesium-ribbon and move it from one side to the other while it is burning. Also, we can carry a supply of magnesium-ribbon with us at times when flash-powder would not work so well, say when we are camping and want to take some campfire scenes, for magnesium-ribbon will neither spill, explode, nor be affected by moisture."

"You must have been doing some studying on the subject of flashlight-photography", observed Bert.

"I surely have", admitted Ray. "And what is more, I have made a nice bunch of notes in our library notebook, covering the principal points, so that we can get information on any feature of flashlight-photography without wading through a stack of literature. What do you think of it?"



RAY'S FLASH-GUN NEIL WAYNE NORTHEY

Bert took the proffered notebook.

"Say, that looks good. Suppose we go over it together before we start operations, so that we shall not make so many mistakes."

"All right", agreed Ray. "There's no use beginning work anyway until the rest of the family get their morning's work finished."

Here is a copy of Ray's notes just as they appeared in the workroom notebook:

LIGHTING

Correct lighting depends upon: (1) *Position of the flash.*—It should be out of range of the lens so that it will not produce flare, or it should be

shaded from the lens; and it should be to one side of the subject and considerably higher, so that the lighting will be neither flat nor harsh. (2) *Diffusion.*—It should be obtained by the use of a screen between the flash and the subject, especially if the flash is close to the subject. Soften the shaded side with a reflector. (3) *Distance.*—Place the flash far enough from the subject to give even illumination, as otherwise the sides of objects toward the flash will be chalky white and the shaded sides will be black. Increase the amount of powder used in proportion to the square of the distance. For example, if six grains of flash-powder or six inches of magnesium-ribbon is required at a certain distance, say six feet, at twelve feet the amount would be approximately four times as much, twenty-four grains of powder or twenty-four inches of magnesium-ribbon (6 x 6 = 36; 12 x 12 = 144; 144 ÷ 36 = 4). (4) *Natural or artificial light.*—Use whatever natural or artificial light may be available, as it will soften shadows and prevent unnatural expression in the eyes.

Exposure

The amount of flash to use depends upon: (1) the nature and color of the subject; (2) color of the walls and drapes; (3) speed of plate or film used; (4) distance of the flash from the subject; (5) actinic quality of the flash; (6) amount of natural or artificial light used in conjunction with the flash; (7) size of the stop used; (8) size of the room.

Softness

As flashlights tend to be contrasty, the following factors may be used to give softness: (1) The farther the flash is from the subject, the softer and evener is the illumination. (2) Use as large stop as is consistent, stopping down only enough to get the required depth of field. (3) Use a slow-burning powder or magnesium-ribbon that can be moved during exposure. (4) Use two or more flashes, one on each side, to break up the shadows. (5) Diffuse the light with a cloth in front of the flash, and use a reflector like a piece of white cardboard on the shaded side of the subject. (6) Use a weak developer and a soft-working one like Metol, Elon, Rodinal, or Eikonogen. (7) Use a soft-grade of paper for negatives that prove to be too contrasty.

Record

As a guide to future work, keep a complete record of every flashlight-exposure, giving: (1) kind of flash material used, whether powder, cartridge, sheet, or magnesium-ribbon; (2) the kind of subject, and whether light or dark; (3) the distance from the camera to the subject; (4) the distance from the flash to the subject; (5) the position of the flash and its distance above the subject; (6) the amount of flash-material used; (7) the size of stop used; (8) the kind of plate or film used; (9) the kind of reflector used; (10) the kind and amount of artificial or natural light used, if any; (11) the kind of developer and paper used.

Reminders

1. Use a tripod or other support for the camera.

2. Watch out for reflections from pictures, mirrors, furniture, windows, and such things.

3. Clear the room of smoke between flashes, in order to prevent fogged pictures.

4. A No. 2 Eastman Flash-Cartridge or a No. 2 Flash-Sheet is about right for an average room and subject, at Stop 16.

5. Leave lights burning in the room.

6. About six feet is the best average distance between the flash and the subject.

7. A No. 1 Flash-Sheet contains 12 square inches; a No. 2, 20 square inches; and a No. 3, 35 square inches, giving a ratio of about 2½, 4, and 7 in lighting-capacity.

8. Be sure there are no inflammable materials like curtains near the flash.

9. When using powder in a flash-gun, always place the powder in the gun the last thing, after everything is ready.

10. When using a focus-scale, measure the exact distance between the camera and the subject.

11. When focusing in dim light, hold a candle or match near the subject, or use a pocket flashlight.

12. Be sure the lid has been removed from a Flash-Cartridge before lighting the fuse.

13. Keep flash-material away from the face.

14. If flash-powder is used, after removing the amount of powder that is wanted for the flash, close the container and place it in another room.

15. Avoid having the subjects look directly at the camera or flash.

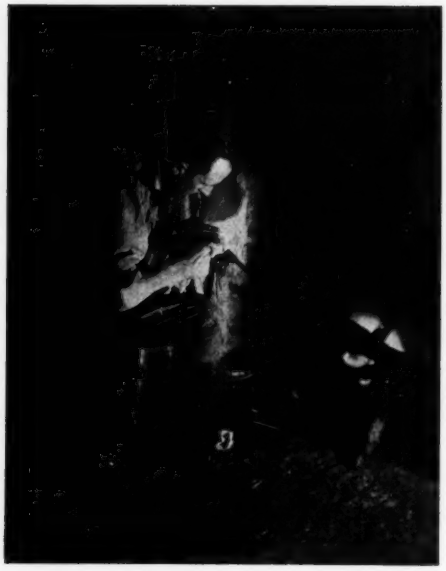
16. Before setting off a large flash, open a window or a door to allow an escape for the concussion.

17. About forty-five degrees is a good angle for the light from the flash to reach the subject.

18. The best way to burn magnesium-ribbon is to light it from a burning-candle or torch that can be placed near at hand.

19. Flash-powder must be kept in a very dry place.

XUM



RAY'S PICTURE OF BERT

NEIL WAYNE NORTHEY

20. Be calm; take your time; but not so much that your subject gets nervous.

"I didn't suppose there were so many angles to flashlight-photography", said Bert, after the two boys had finished going over the notes.

"There really isn't anything to it that can't be learned easily", said Ray. "It's like everything else in photography—just requires practice and attention to details. I believe carelessness spoils more pictures than a lack of information."

"Yeh, I guess you're right. Hello, what's this?" Bert picked up an object, apparently of Ray's making, which he had not noticed before.

"That's an electrical flash-gun for firing flash-powder", grinned Ray proudly. "I made it myself for the enormous sum of nothing. I wanted a flash-gun that would fire the powder *every time*, even though the powder might be a little moist, and one that would fire exactly when and where I wanted it. There's enough to think about without worrying over misfires that only make everyone in the picture nervous.

"Well, I'll be", said Bert. "How does it work?"

"It's simple", answered Ray. "I found this piece of heavy glass and fastened it across the top of this block, which has the center cut away to make a space for pinching these wire terminal clips to the glass. I borrowed the extension cord from the garage, and we can plug into any light or fixture socket. I cut one wire of the extension cord in two in the middle and put in this push switch so that the cord runs from the light-socket to the push switch at the camera, and that leaves the other half of the cord, which runs to the flash-gun, long enough so that the gun can be placed anywhere it is wanted. In that way the one who is operating the camera can touch off the flash when he trips the shutter, even though the flash-gun is at a distance."

"That's great", said Bert. "But what makes the flash?"

"Simply cut a little strip of tinfoil, such as comes around films, about as narrow as possible and so that it will still hold together, say one-sixteenth of an inch wide. Lay it on the glass, and pinch terminal clips to each end and to the glass, about an inch apart. When the switch is pressed, the current blows the tinfoil fuse and ignites the powder. The main thing to remember, of course, is to see that the switch is off when placing the fuse."

"Why not use a switch that is always off except when the contact is held?" suggested Bert. "Say a door-bell button. That would eliminate the danger of forgetting to turn off the switch after each flash."

"That would be fine", agreed Ray, "but I

BERT'S FLASHLIGHT OF RAY

NEIL WAYNE NORTHEY

didn't have one handy. We could fasten it to a block of wood and rest it on the floor by the camera. When everything was ready, we could trip the shutter with a hand and press the switch on the floor with a foot. If we are photographing a nervous person, we can pretend we are adjusting the camera, then catch the subject unawares by pressing on the switch before he knows we are ready."

"Why not try a shot or two here in the basement while the others are stirring around upstairs?" suggested Bert.

"Suits me", agreed Ray. "I'll take a fireplace view of you."

"Fireplace", laughed Bert, "where's the fireplace?"

Ray procured a large packing case from another room, and set it up against a wall with the open side outward.

"There it is", he smiled; "I'll take a piece of chalk and mark one side of the box to represent mortar between rocks. Then I'll get a few sticks from the fuel room, and perhaps an old chunk of wood to make it look more backwoodsy. You may sit on this old can, and in your hiking togs it will seem as though you are in a log-cabin camp. Let's see, what would be a natural thing for you to be doing? Polishing this automatic pistol, I guess. I'll burn a small flash in the 'fireplace' for firelight effect, and a small piece of magnesium-ribbon by the camera to light that side a little."

After Ray had made the exposure, Bert jumped up from his seat in front of the improvised fireplace.

"Now, I'll try one of you", he said. "You roll up a piece of paper until it is the size of a cigarette, and stick an inch of magnesium-ribbon in the end of it. Then when I say 'Ready', you light a match and hold it to the magnesium-ribbon just as you would if you were lighting a cigarette."

And so the exposure was made.

A half hour later the boys mounted the basement steps carrying their cameras and flash-equipment, and with their heads filled with ideas for all kinds of unique lightings and compositions. Then, while the wind blew outside, driving a cold rain against the windows and sending small rivers down the street, the two camera-enthusiasts started in to put some of their ideas into effect with the patient help of the other members of the Wentworth family.

(To be continued.)

Photographing Statues

RAYMOND A. WOHLRABE

PERHAPS you have heard some "snapshot artist" suggest, in the infancy of his introduction to the manipulation of a camera, that a statue or a monument is the easiest thing in the world to photograph. It may be that the statue is not so large or so difficult to place in the field of the finder as a building may be. It will not move. One does not have to catch it on the run. All true, but—

Perhaps, too, you have seen some of the photographs which that same "artist" gets as a reward for his effort. They may have been the easiest thing in the world to get; but often they are the hardest things in the world to appreciate after you have them! Did the background which he chose, or took by chance, better the pictorial effect? Perhaps that statue, artistic, beautiful, grand as it may have been before the eye of the camera, has become, in his photographs, a masterpiece of expressionless stone. He might have obtained a silhouette. He might—well, had he considered all the little details which make or ruin a good picture, then the task of photographing a statue would probably not have been so easy a stunt, after all.

There are several points which should be considered when photographing subjects of this nature. There is the color of the material of which it is made—marble, bronze, concrete, granite, or whatever the material happens to be. There is the background, and the relation of it to the principal object; the angle at which the rays of light strike; its size, and the possible advantage of introducing some other object to accentuate size. These are only a few points, but they are the few which determine, in all probability, whether the attempt is to be a success or a failure.

The material of which the statue is constructed and the background are so related that they must be considered together. Suppose it is a statue of bronze—dark. From the detail which makes itself shown, everything which detracts should be removed. A surface of bronze will permit so little of the difference between light and shade to show as not to allow any chance of the loss of some of that difference because of

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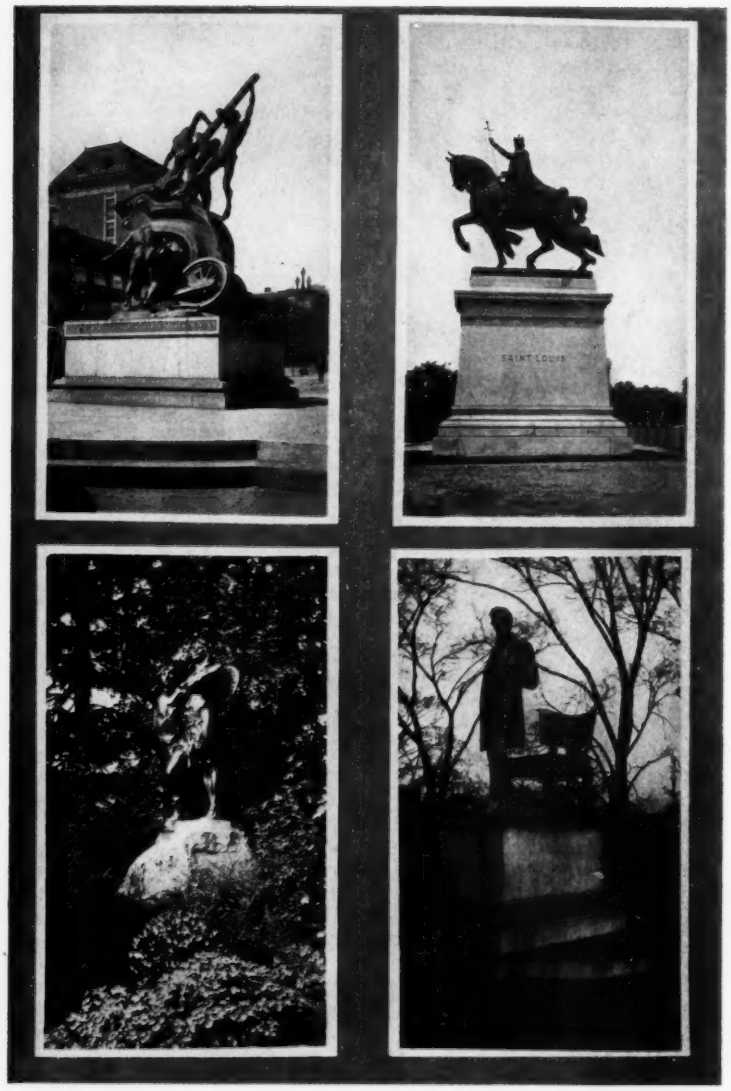

1. "MECHANICS", ON MARKET STREET, SAN FRANCISCO
2. "THE COMING OF THE WHITE MAN", PORTLAND, ORE.
   (*Showing how background of heavy foliage detracts from bronze statue*)
3. "SAINT LOUIS", BEFORE ART MUSEUM, FOREST PARK, ST. LOUIS
4. ST. GAUDENS' "LINCOLN", CHICAGO

GROUP OF STATUES — RAYMOND A. WOHLRABE

THE SHADES — RAYMOND A. WOHLRABE

the background. For a statue of bronze, a background of clear sky or white wall is probably best. The dark foliage of trees would blend too well with the bronze of it. If it is autumn or winter and the branches of the trees are stripped of their foliage, then they will not mar to so great an extent the effectiveness of the picture. Suppose that the statue is white or light gray. A poor showing a subject of this kind would make against blank sky! In cases like this, trees with considerable foliage are very desirable. Something decidedly dark for a background—trees, shubbery, hills, the distant landscape—anything but blank sky will help. And when the object to be photographed is in the lobby of a building or in a street, a background of objects quite out of focus will improve the effectiveness of the picture.

Now consider the angle at which the rays of light strike the surface of the statue. Since the amateur does not as a rule have films equally sensitive to all parts of the spectrum available for the camera he uses, he will depend upon the differences in reflection of light and the shadows of the object to overcome any tendency to photograph with a blank surface. Light coming at an angle rather than from some point vertically above the statue will often increase the density of the shadows on the surface. For this reason it is often of considerable advantage for him who wishes to photograph a statue to get it in the early part of the forenoon or in the latter part of the afternoon. Occasionally one can add to the artistic effect, especially if the statue is white, by taking it to some extent "against the sun". Then not so much of detail will show; but the long shadows which spread themselves over the whiteness of the statue or the base of it often produce a more artistic effect.

Size will be considered more often in the case of monuments, which are simply tall, needle-like shafts, than in the case of statues. However, there are some statues which will yield a better photograph if there is something placed in the foreground that serves to accentuate size. The Statue of Liberty in New York Harbor or the giant Buddha at Kamakura in Japan are examples of this exception. In such massive statues or monuments, massiveness or immensity is one of the qualities the photograph should carry. This idea of immensity can often be carried over by getting some person in the foreground or near the base of the monument. Referring again to the Statue of Liberty, here is one example where the background can do the work. A skyline of skyscrapers would undoubtedly serve the purpose well, and such a skyline New York City can easily supply.

There are other points, too, that might well be considered when the subject which is being photographed is a monument or statue. But the above three are more general and lend themselves to a greater number of cases. Considering them before the picture is made, one will often increase the chances of that picture becoming a success—more than expressionless stone.

XUM

CRYSTAL
A. G. NIIDO
HONORABLE MENTION—BEGINNERS' COMPETITION

EDITORIAL

Spring—Another Opportunity

PERHAPS we may not be aware of it; but spring is just as much a matter of heart and mind as it is of outward physical manifestation in the realm of nature. In fact, if our hearts are not attuned to the song of birds and the budding flowers, spring becomes a thing that is cold and lifeless. Spiritually and photographically, we need spring. It is the time of year when we need to take a fresh grip on ourselves and our opportunities, photographically and otherwise. The first requirement is to open our hearts and minds to the beauty around us. Even though we may be hemmed in by the great buildings of a large city, there is still the opportunity to look up into blue sky and to note with quiet happiness the beauty of the floating clouds and feel the comforting warmth of the spring sunshine. Those of us who are privileged to look out across the hills, to know the delicate beauty of spring in the woodlands, and to note with a thrill of delight the arrival of the blue birds, cannot help feeling the mental and physical rejuvenation which is spring at its best.

There are those who seem to have little time for what they term the sentimentality of spring. We hope that the day will never come when spring fails to thrill us with all its beauty—and sentimentality, if you will. Life, at best, holds enough of the cold, hard facts which must be met day by day. There is far too little of the happiness of springtime in it for most of us. And so, let us try to catch something of that pure joy which only the song of birds and the budding flowers seem to express adequately.

The true pictorialist knows that, before he can make a masterpiece, he must have the eyes to see and the heart to understand those things which often lie too deep for words. He knows that the spirit of spring in his heart will help him as nothing else can to make pictures which are filled with truth and beauty. Call it sentimentality, spiritual rejuvenation, or what you will, the true pictorialist needs to become attuned to something higher and better in order to make his camera express all that it can portray in the hands of the man or the woman who understands the message of the birds and the flowers.

Some men, and women, too, hold to the belief that a love of nature is a sign of weakness. To such men and women, the song of a bird or the tender bud breaking its way through the protective covering carry no message. It is a matter of record that most of the great men and women of history understood and loved nature. In times of great stress they sought seclusion, rest, and inspiration out where they could catch the message of the hills, the woodlands, and the song of birds. Weakness? Ah, no. These men and women were turning to one of the greatest sources of power and inspiration that the world has ever had.

We have known many who through no fault of their own have been denied the opportunity to become attuned to the song of birds and the budding flowers. Outside influences, environment, or lack of initiative may have had something to do with covering up a dormant love of the beautiful in nature and in man. There is a subtle something about photography which seems to coax men and women out of themselves. So often we read the phrase, "I began my photographic work with a little Brownie camera." We did; and so did thousands of others. What is there, or was there, in that little Brownie camera to grip us all and hold us loyal to photography down through the years? Many reasons might be given; but from our own experience and observation, we believe that the little Brownie camera not only made pictures for us, but it rolled back the cold, hard stone from the door of our hearts and revealed to us a beauty in the hills and woodlands we had never known.

Sentimental? Impractical? Yes, there is nothing in these lines for the practical, matter-of-fact, coldly scientific reader. He doubtless feels that valuable editorial space has been wasted on a subject which has no direct bearing on photographic failure or success. With all due respect, we take our stand on the age-old statement that "as a man thinketh in his heart, so he is". We believe that photographic success depends in great measure upon the way a man "thinketh in his heart". If he thrills to the song of birds, the floating cloud, the nodding flower; if he holds the love of young and old, and if he looks up to the eternal hills for his strength and inspiration, that man, we believe, can become a true pictorial photographer. To him, spring means another wonderful opportunity.

XUM

ADVANCED COMPETITION

Closing the last day of every month
Address all prints to PHOTO-ERA MAGAZINE, Advanced Competition
Wolfeboro, New Hampshire, U.S.A.

Prizes

First Prize: Value $10.00.
Second Prize: Value $5.00.
Third Prize: Value $3.00.

Honorable Mention: (*a*) Those who win an Honorable Mention Award and are *not regular subscribers* will receive PHOTO-ERA MAGAZINE for six months with the compliments of the publishers.

(*b*) Those who win an Honorable Mention Award and are *already subscribers, or have been subscribers,* will receive an Honorable Mention Certificate. Those who win ten of these certificates and send them to us to be recorded will receive a neat silver cup, suitably engraved. There is no time-limit. However, ten certificates must accompany all requests for the cup.

Prizes may be chosen by the winners, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in PHOTO-ERA MAGAZINE, or in books. If preferred, the winner of a first prize may have a silver cup, suitably engraved.

No Prize or Honorable Mention pictures are sold, exchanged or the halftone-plates sold without permission, in writing, from the maker of the print. Proceeds of all sales, *excepting halftones,* go to the maker of the picture.

All competition-pictures not returned are used to make up the PHOTO-ERA PICTURE EXHIBIT which is sent to schools, libraries, museums, camera clubs, and to responsible organisations for exhibition-purposes, *free of cost.*

Rules

1. This competition is free and open to photographers of ability and in good standing—amateur or professional.

2. Not more than two subjects may be entered. *Composition, exposure and photo-finishing must be done by the competitor.*

3. Prints on rough or linen-finish surface are not suitable for reproduction. *Mounts must not be larger than 16 x 20 inches.* Prints may be mounted or unmounted.

4. Each print must bear the maker's name and address, the title of the picture, and the name and month of competition, and should be accompanied by a letter, *sent separately,* giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer, and printing-process. Enclose return-postage. Data-blanks sent at request.

5. Prints receiving Prizes or Honorable Mention become the property of PHOTO-ERA MAGAZINE, unless for special reasons. This does not prevent the photographer from disposing of other prints from such negatives *after* he shall have received official recognition.

Photo-Era Prize Cup

6. Unsuccessful prints will be returned only when return-postage at the rate of one cent for each two ounces is sent with data.

7. Prints should be carefully packed between two layers of cellular board so cut that the corrugations run at right angles to each other.

8. Competitors who have won three first prizes within a twelvemonth become ineligible to receive prize cups in this competition for *one* year thereafter.

AWARDS—ADVANCED COMPETITION

Subject—MY HOME

Closed January 31, 1930

First Prize	Dr. K. Koike
Second Prize	Clarence Ponting
Third Prize	Kenneth D. Smith

Honorable Mention: Mary Callaghan; E. P. Fleming; Curt Foerster; George W. French; Emily H. Hayden; Joseph Jackson; Edouard C. Kopp; Alma R. Lavenson; Walter Lipkau; Edward McMahon; Anne H. Mellin; C. E. Melville; George Miller, Jr.; Helen E. Miller; Paul Miller; Hugo Raeth; Mario Lucio Scacheri; D. Vincent Smith; L. P. Tabor.

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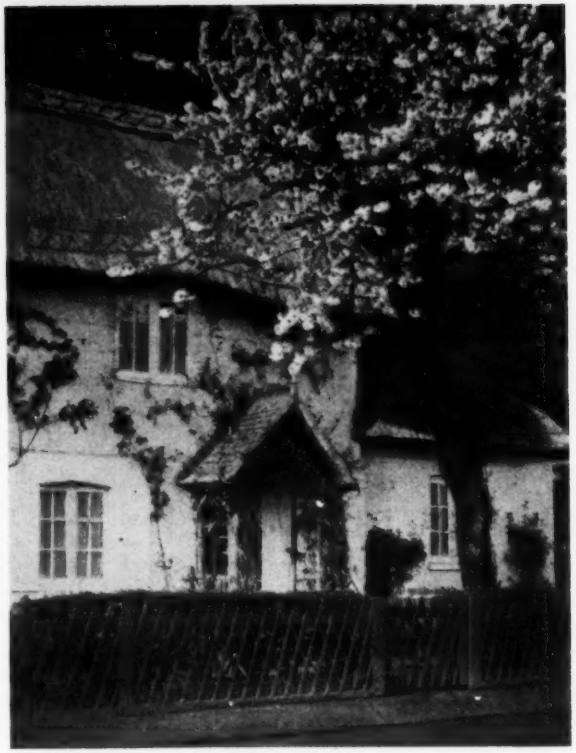
CALLED A HOME

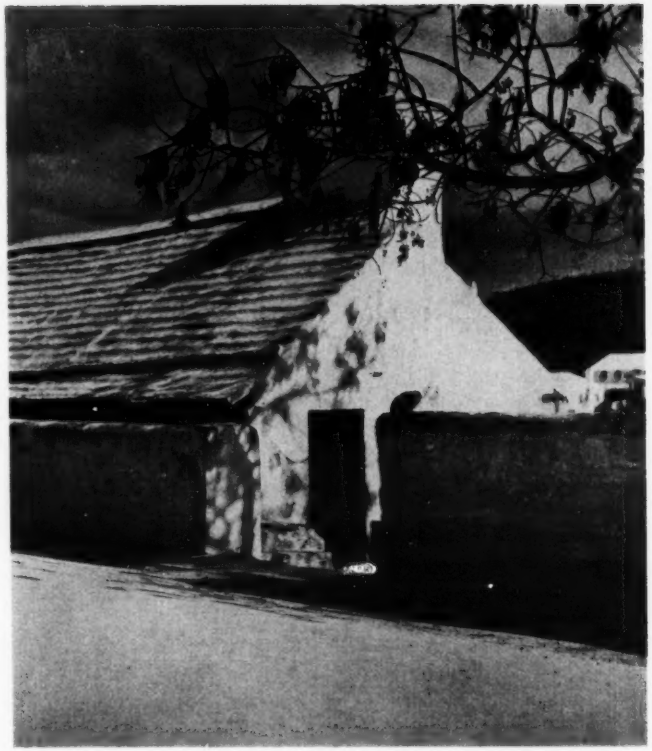
DR. K. KOIKE

FIRST PRIZE—MY HOME



AN ENGLISH HOME — CLARENCE PONTING

SECOND PRIZE—MY HOME



BERMUDA SUNSHINE — KENNETH D. SMITH, A.R.P.S.

THIRD PRIZE—MY HOME

SUBJECT FOR NEXT COMPETITION

ADVANCED WORKERS

Subjects for Competition—1930

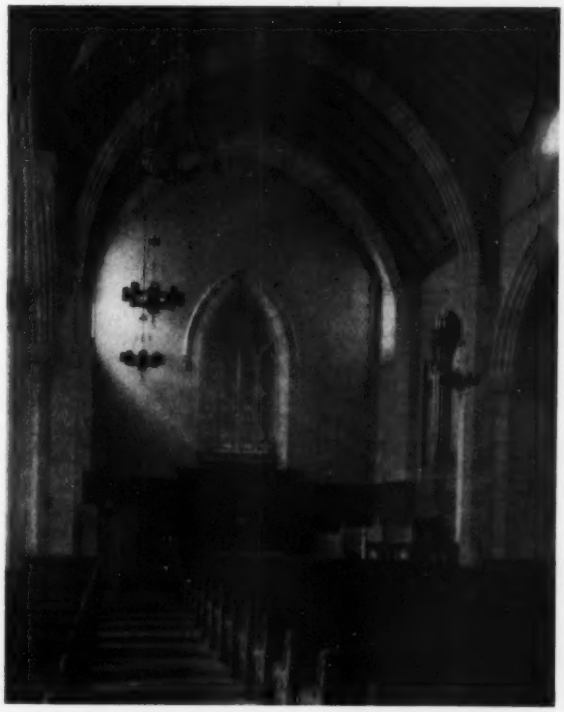
"My Home." Closed January 31.
"Portraits." Closed February 28.
"Indoor-Genres." Closed March 31.
"Miscellaneous." Closes April 30.
"Commercial Illustrations." Closes May 31.
"Architectural Subjects." Closes June 30.
"Pictures of Children." Closes July 31.
"Miscellaneous." Closes August 31.
"Outdoor-Genres." Closes September 30.
"Animal Pictures." Closes October 31.
"Water-Scenes." Closes November 30.
"Miscellaneous." Closes December 31.

Commercial Illustrations

THIS is a new subject for our competitions which was suggested by a number of regular contributors to these competitions. Because it is a new subject, we cannot reproduce as typical an example of interpretation as we believe will show adequately what we have in mind as a commercial illustration. However, from the sponsors of this new subject we are lead to assume that any subject which may be used to promote or explain something in industry will meet the requirements. The beautiful picture reprinted on this page might very well be used commercially to illustrate the work of an architect or contractor.

Without a doubt, pictures of various products, wearing apparel, automobiles, vacuum cleaners or tooth paste would be satisfactory as being commercial illustrations. Perhaps the best definition would be any picture which would be of advertising value to the manufacturer of a product. Furthermore, a point to bear in mind is that photography is playing an important part in commerce; and contestants in this new competition should try to show how it is being done. A study of some of the leading advertisements illustrated by photographs will help to suggest good subjects. Composition and lighting are important.

A. H. BEARDSLEY.



INTERIOR — HOWARD G. DINE

EXAMPLE OF INTERPRETATION

XUM

BEGINNERS' COMPETITION

Closing the last day of every month
Address all prints to PHOTO-ERA MAGAZINE, Beginners' Competition
Wolfeboro, New Hampshire, U.S.A.

Prizes

First Prize: Value $7.50.
Second Prize: Value $3.50.

Honorable Mention: (*a*) Those who win an Honorable Mention Award and are *not regular subscribers* will receive PHOTO-ERA MAGAZINE for six months with the compliments of the publishers.

(*b*) Those who win an Honorable Mention Award and are *already subscribers, or have been subscribers,* will receive an Honorable Mention Certificate. Those who win ten of these certificates and send them to us to be recorded, will receive a neat silver cup, suitably engraved. There is no time-limit. However, ten certificates must accompany all requests for the cup.

Prizes, chosen by the winner, will be awarded in photo-materials, sold by any dealer or manufacturer who advertises in PHOTO-ERA MAGAZINE, or in books.

No Prize or Honorable Mention pictures are sold, exchanged or the halftone-plates sold without permission, in writing, from the maker of the print. Proceeds of all sales, *excepting halftones,* go to the maker of the picture.

Rules

1. This competition is open only to beginners of limited experience with practical camera-activity. *Composition, exposure and photo-finishing must be done by the competitor.*

2. Workers are eligible so long as they have not won a first prize in this competition. Winners of the first prize automatically drop out permanently, but may enter prints in the Advanced Class at any time.

3. Prints eligible are contact-prints and enlargements up to and including 8 x 10 inches.

4. Prints representing no more than *two* different subjects, for any one competition, and printed in any medium except blue-print, may be entered. Prints may be mounted or unmounted, as desired.

5. Prints on rough or linen-finish surface are not suitable for reproduction. *Mounts must not be larger than 16 x 20 inches.*

6. Each print entered must bear the maker's name and address, the title of the picture, and the name and month of competition, and should be accompanied by a letter, *sent separately,* giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks sent at request.

7. Prints receiving Prizes or Honorable Mention become the property of PHOTO-ERA MAGAZINE, unless for special reasons. This does not prevent the photographer from disposing of other prints from such negatives *after* he has received official recognition.

8. Unsuccessful prints will be returned only when return-postage at the rate of one cent for each two ounces or fraction is sent with data.

9. Prints should be carefully packed between two layers of cellular board so cut that the corrugations run at right angles to each other.

PHOTO-ERA MAGAZINE
The American Journal of Photography
Wolfeboro, New Hampshire, U. S. A.

THIS is to certify that an Award of PRIZE
is hereby given to the picture entitled

entered by

in the PHOTO-ERA MAGAZINE Monthly Competition

which closed 192

Editor

PRIZE-WINNERS' CERTIFICATE

PHOTO-ERA MAGAZINE
The American Journal of Photography
Wolfeboro, New Hampshire, U. S. A.

THIS is to certify that an Award of *Honorable Mention*
is hereby given to the picture entitled

entered by

in the PHOTO-ERA MAGAZINE Monthly Competition

which closed 192

Editor

HONORABLE MENTION CERTIFICATE

AWARDS—BEGINNERS' COMPETITION

Subject—MISCELLANEOUS

Closed January 31, 1930

First Prize	Ray De Lescaille
Second Prize	Dr. Kelley Hale

Honorable Mention: J. M. Banerjee; Roland F. Beers; James A. Bell; Lena C. Bronner; J. Daniels; Harold Franklin; Ruth Franklin; Gladys L. Gilman; Edward L. Gockeler; L. P. Gravel, Jr.; Saul S. Hauben; Lionel Heymann; Mike Honos; M. Itoh; Bob Lagerquist; Dr. George B. Lake; H. H. Lott, Jr.; C. P. Martin; Robert W. McKee; R. E. Midgley; A. G. Niido; William F. Noe; R. T. O'Brien; Leo M. Oestreicher; William R. F. Quednau; Edwin A. Reeve; Gaston Remy; R. L. Saettele; L. H. Schneider; Dr. Shupei Shu; Herman Uebel; Edward D. Wilson; Frances Winfield.

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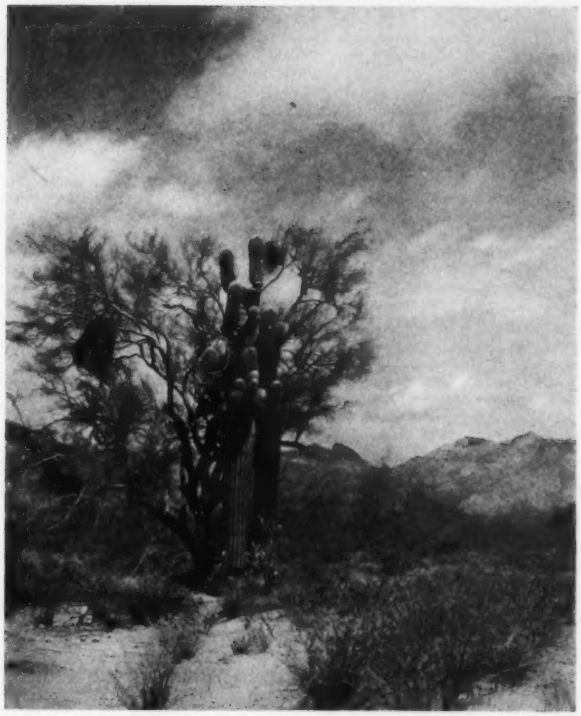
First Prize

BEGINNERS'
COMPETITION

MISCELLANEOUS

WONDERS OF THE WASTELAND

RAY DE LESCAILLE



Second Prize

BEGINNERS'
COMPETITION

MISCELLANEOUS

GOING HOME

DR. KELLEY HALE

OUR ILLUSTRATIONS

ERNEST H. WASHBURN

THE majority of artists in the field of photography, it is probably safe to state, begin as snapshooters, pure and simple, with no thought, at the time, of making other than interesting records for their own amusement or to please their friends. A few of them, very small in percentage, become interested in bettering their work and in photography for itself, later becoming still further interested in it, as a means to produce pictorial results and even to become exhibitors and salonists. This seems to be the usual process of development of the most of those who have written their stories for PHOTO-ERA MAGAZINE. Occasionally the reverse is the case, when the artist begins to make pictures first, by some hand-process, and afterwards takes up photography with definite intent to use it as a picture-making medium. Mr. Alfons Weber, F.R.P.S., who is our "picture-guest" this month, is one of the latter, and it is interesting to note that he discarded photography after a first trial, and later accepted it, encouraged and enlightened by what he saw in an exhibition of truly pictorial photographs. From that point he developed into a pictorialist-photographer, and we are privileged to see his many-times honored print, "On the Chicago River". It is a superb piece of work, pictorially and technically. In some respects it bears a similarity to wash-drawing, but its photographic genesis is not covered up or disguised in any way. It wins on its merits as a photograph and does honor to its maker. The combination of very near and fairly remote architectural features leaves us in no doubt as to the relative size of the structures. If any other object were needed as an index of scale, the towboat in the river is there and confirms our estimate of the relative distances and perspective. Although a flat lighting was selected, there is enough shadow to bring relief and indicate form. A sky of proper and true value relieves the white buildings, but there is no chalkiness in them.

Data: Ica Reflex, 3¼ x 4¼; Zeiss Tessar of 15 cm. focus; exposure 1/30-second at F/4.5, under very light filter, at 4.30 P.M., in May, on Agfa filmpack; developed in M. Q. and enlarged on Haloid Portraya Black, XX. Sky of negative reduced. Highlights painted with Agfa neo-coccin.

"Coasting", by Howard Dine, is an unusual way of depicting this ever-popular sport. The leading coaster catches our attention at once, being the darkest spot in the picture, but the other two are in such position as to repeat the first and we get the sense of motion in the entire group. A feeling of white, hard snow is conveyed by the "back-lighting", as studio workers call it. There seem to be more than enough accessory objects in the picture, and we feel that a generous piece can be spared from the top, to concentrate the interest. We should trim to within one-half inch of the chimney-top (in the picture as reproduced) and feel the picture to be better in every way.

Data: Graflex 3¼ x 4¼, with Tessar F/4.5, of 6⅜-inch focus, used at F/5.6 under K-1 filter, in December, good light, against sun. Imperial Panchromatic filmpack, developed in A. B. C. pyro. Blue bromoil print. Made in late afternoon, looking toward sinking sun; hazy clouds.

"The Stairway", by Walter S. Meyers, is good in the feeling of textures, or surfaces, and also in perspective and lighting. We feel that the vertical edge of the wall in the middle is too exactly central and tends to cut the picture in halves. It would seem that a slight turning of the camera might have avoided this.

Data: Made in New Orleans with Voigtländer camera, 2¼ x 3¼, fitted with Heliar lens of 4¼-inch focus. Exposed 4 seconds at F/4.5 in April, at noon, in brilliant light, on filmpack. Developed in pyro and enlarged on Wellington Mezzotint paper.

"New York Public Library", by Alvin C. Greiner, is a very unusual combination of a strong architectural background, with human figures in a large group. There is a certain story-telling aspect in the latter, as it would appear that the large numbers gathered upon one of New York's most prominent public buildings must be awaiting the arrival of a parade on Fifth Avenue, or, possibly, merely enjoying themselves quietly, which is unusual for the great metropolis's restless citizens. It is the strong light and shade effect upon the great building, however, which predominates. The broad masses of shadow are sharply accented by the brilliantly sunlit parts. This is especially true of the ornamental urn against the major shadow, which, by the way, is nicely complemented by the tall lantern in shadow. A little more printing out or local development of the highlight upon the building, bringing out more of the seams in the stone-work, would tend to reduce the somewhat over-hard line of the corner. It is a strong picture and bears a striking resemblance to the modern etchings and engravings, upon copper, of the young French artist Decaris, which are now being exhibited in America for the first time, in Boston.

Data: Graflex, 3¼ x 4¼, with Eastman anastigmat lens of 5⅜-inch focus. Made in July at 3 P.M., in 1/90-second at F/6.3, on Commercial Panchromatic cutfilm. Developed in metol-hydro and enlarged on Tumagas.

"Drifting Dunes", by Mary Ruth Walsh, is striking in composition and rhythmic effect. The handwork is so prominent, however, that it appears as much like a pencil sketch or light charcoal drawing as a photograph; in fact, more so. We should much prefer a more truly photographic quality throughout.

Data: Goerz camera, 3¼ x 4¼, with Dogmar lens. Made at 2 P.M. in May, in sunlight, on Kodak rollfilm. Exposure 1/10-second, at F/11, under 3-times filter. Developed in Amidol and enlarged upon Velour Platinum Matte, and then bromoiled.

Alexander Leventon's portrait of a "Russian Boy" appeared in the issue of October, 1929, and was fully commented upon at the time. It strengthens upon long acquaintance and continues to win admiration and honors, wherever shown. Complete data will be found in the October, 1929, review.

"A Market Stall", by A. R. Blackburn, is without doubt typical and truthful in setting and accessories. The two nearer models are entirely unconscious and well placed, and the background is properly subordinated. The woman stall-keeper, as we assume the

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central figure to be, seems far away and out of the group. By her facial expression one might assume she is not pleased with her customers. There are no data, but the print is a bromoil.

Nancy Ford Cones is too well known to the art-loving group of photographers in America, as well as in Europe, to require any introduction. For many years her simple pictures of humankind, especially women and children, have charmed a large number of admirers. "The Beauty of an Aged Face" is one of her best. In composition, pose, expression, and lighting, it leaves no opportunity for aught but praise. The wrinkled face and wistful eyes tell the story of hardships endured, through many a weary year.

Data: Korona 5 x 7 camera; Cooke lens, of 8-inch focus. Exposure, 3 seconds at F/8, on Eastman plate, by good window-light, at 3 P.M. in February. Developed in M. Q. and enlarged on tissue bromide.

Thomas O. Sheckell's "Decorative Panel" fulfills the title very adequately. The graceful swan, surrounded by his own encircling ring of ripples, is placed in a strong part of the picture to command attention, while the drooping willow-branches and other water-shadows form a pleasing offset and balance, and add greatly to the theme of decoration.

Data: View-camera 4 x 5, with Struss lens of 9-inch focus, at F/8. Made at 9 A.M. in September, on filmpack. Developed in pyro. Glossy bromide enlargement

Several months ago, Willard D. Morgan entertained PHOTO-ERA readers with his engaging story of an automobile trip through northern New Mexico with a Leica camera. (*See* February, 1929, issue.) His interest in its possibilities apparently is still keen, as is attested by his article this month on film-slides, from 35-millimeter cinema-film positives, for use in Leitz and Bausch & Lomb projectors. The article should prove helpful to all who can avail themselves of this apparatus. The complete set of illustrations leaves no point in doubt and is typical of Mr. Morgan's thoroughness. The enlargements on pages 191 and 194 demonstrate the capabilities of the small instrument in his expert hands.

The portraiture of Dr. Theron W. Kilmer have probably contributed as much solid satisfaction, to admirers of fine portraits of men, as that of any portraitist in America. Dr. Kilmer is in the front rank among portraitists, either amateur or professional. The collective group on page 197 contains many well-known prints from his hands. The addition of his own portrait fittingly completes the story. It needs but one look at his purposeful face to understand why his pictures search the inside of the subject and bring it forth before the world. We have no doubt his genial personality is the real key. Besides, if a doctor can't look into your very insides and bring them forth, who can?

Bert and Ray are going so fast now that we have to step lively to keep pace with their activities. This month they are "flashing" each other and we are bound to admire their success. We know not where the trail will lead, but we shall tag along, even if we have to run, in order to keep up with their band-wagons. The picture of Ray has a good deal of "it". He had good nerve to try it; also, Bert had "*a nerve*" to suggest it.

Raymond A. Wohlrabe has valuable suggestions for the guidance of hand-camera workers who wish to make photographs of statuary. His prints exemplify the points he stresses. They are fine examples of good technique. The St. Gaudens' "Lincoln" is probably the best of them all. It would seem that a more effective placement would be to have more space in front of the figure, rather than at the rear. We like the Indian group very much, although, as Mr. Wohlrabe states, the background makes it an almost impossible subject for the best photography. It is regrettable that the group entitled "Mechanics" had to be made from a point which brings the tall building behind it. We assume that this was unavoidable. "St. Louis" is a powerful piece and makes a striking silhouette against the sky. The suggestion of clouds in the background gives a pleasing touch of atmosphere. "The Shades" is a gruesome subject, and better left in a museum than placed in a public place. We suppose it is symbolic; but why symbolize such unpleasant ideas?

Data: All of the photographs illustrating Mr. Wohlrabe's article were made with a 3A Kodak and R.R. lens at U. S. 8 (F/11). The exposure in each case was 1/100-second.

"Crystal", receiving honorable mention in the beginners' competition, is an ambitious piece of work for a beginner, and Mr. A. G. Niido is entitled to much credit. We do not think the lace background adds to the ensemble, but rather detracts from the simple beauty of the lights and shades in the goblets.

Data: Popular Pressman reflex camera, 3¼ x 4¼; Carl Zeiss Tessar F/2.7, of 6½-inch focus; made in January at 3.30 P.M., near a window. Exposure, 3 minutes at F/22, on Agfa filmpack; developed in metol-hydro, and enlarged on P. M. C. No. 9.

Advanced Competition

DR. K. KOIKE has again run off with first prize in the "My Home" competition, with his print, "Called A Home". It is surprising with what consistency Dr. Koike produces pictures of high quality. He picks the subjects anywhere and everywhere, with an unerring eye for spots and masses. Although the house is quite centrally placed, yet its reflection and the masses of shrubbery and trees at the left create an interest on that side which keeps us from noticing it, without critical examination. There is a fine "wet" quality in the foreground, unmarred by any over-garish lights. The distant shore line is rather too prominent but can easily be adjusted, although we observe that the Doctor does not "doctor" his prints very much. There is a fine bit of atmospheric background in the cloud-curtained mountain. In fact, the whole scene might be described as "wringing-wet". Everything looks rain-soaked.

Data: No. 1 Kodak; anastigmat lens; used at full opening, F/6.3, under 2-times color-filter; 1/25-second, in January, at 10 A.M.; cloudy; rollfilm, pyro-developed. Bromide enlargement.

Clarence Ponting's entry, a livable and lovable English home, has captured the second award. It is filled with the charm of home-feeling. The beautiful cherry-tree in full blossom lends an added feature of great decorative value, besides contributing to the "home" idea. We wish the gate had been open. Try as hard as we may, it seems almost impossible to get the "homey" feeling into our domestic architecture that is present in English dwelling-houses, although we are rapidly approaching it. Mr. Ponting's artistry is of a kind that encourages us, by presenting choice examples.

Data: Thornton-Pickard Ruby Reflex; Cooke lens of 6-inch focus; stop F/8; April; bright light; Imperial Ortho plate, developed in M. Q. Print on Gulliman Matte bromide paper.

"Bermuda Sunshine," from the camera of that indefatigable traveler-photographer, Kenneth Dudley Smith, is awarded third prize and is typical of the

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clean and sound technique of that artist, coupled with well-developed knowledge of composition. In its angular aspect it smacks somewhat of the modernist idea, although Mr. Smith is far from being an extremist. The several angles and masses are well arranged, and the tree-limb introduces a certain decorative effect, while its shadow upon the gable-end of the house breaks up that highly brilliant surface. At first sight, the print appears to be somewhat hard, but there is detail everywhere and we believe the title is well carried out. Tropical sunshine upon white plaster cannot be much else but white.

Data: Series C, Graflex, 3¼ x 4¼; Cooke lens, F/2.5, of 6½-inch focus; 1/40-second at F/8, under K-2 filter, in March; on Eastman Commercial Panchromatic cutfilm; developed in pyro-tank and enlarged on Eastman Old Master, Buff.

Beginners' Competition

THE winner of first award in this class is indeed a beginner, having been a camera owner for about one year. We are glad to see, however, that he started right, by subscribing to PHOTO-ERA and *Camera Craft*, which without doubt helped him to make more rapid progress than otherwise. His winning print, "Wonders of the Wasteland", is exceptionally well composed and technically perfect. It fairly radiates sunshine, but has a lovely soft sky, which is an index of good values throughout. Mr. De Lescaille is to be felicitated on his successful achievement.

Data: March, 10.30 A.M.; bright sun; B. & L. Protar VIIA, 9¼-inch focus; stop F/8, 1/10-second, under K-3 filter; Eastman Panchromatic film; A. B. C. pyro developer in tank; Velour Black enlargement, from 4 x 5 negative; M. Q. developer, contrasty. In addition, Mr. De Lescaille writes that the large cactus is the giant cactus, the tree a mesquite, and the dark bunches the desert mistletoe.

"Going Home", by Dr. Kelley Hale, has earned a well-merited second award. It is dramatic and poetic. The clear black silhouetted figure forms a typically Western outline and the buildings in the middle distance suggest a dwelling-place. The brilliant sunset-glow back of the distant peak and touches of light on the clouds are dramatic, but full of the poetry and peace of departing day. The whole picture is much above the ordinary.

Data: Made in July, after sundown; Zeiss Tessar F/4.5; exposure 1/15-second at F/16 under K-1 filter; Eastman Commercial Ortho film; A. B. C. pyro developer; enlargement on Eastman P. M. C., No. 8 bromide, developed in formula D72.

To My Camera

If I could hike with you along a byway
Where sun-bathed daisies tremble in the breeze;
Where golden-throated songsters, after showers,
Trill softly from the branches of the trees;
If I could view the ever-changing cloud-forms—
Forgetting all the city with its noise—
And cast my eyes afar towards lofty mountains,
Communing with Dame Nature and her joys;
If I could stand with you upon a hilltop
Immersed in summer's softly scented air,
I'm sure that I would need to seek no further—
I know that I would find a picture there!

The Groundglass.

The Beginner

WE constantly read and hear that this or that is terrible, and I often wonder in what state of mind the sincere beginner finds himself. By sincere beginner I mean any man or woman who is interested and humbly searching for the mysterious something that enables the exalted and seasoned pictorialist to be able to receive fame and recognition for his work. This definition is dictated from the very recent memories of my own position as a beginner, some ten years ago, and I now speak as one who has not arrived, but has advanced to a seeing distance from the coveted seats of fame.

One reads an article or hears an authority claim the road to fame is by the bromoil process; then another says large gums, another small contact prints, another sharp-focus; others say soft-focus, figure studies, portraits, action, marines, and so on, until the man seeking the right ladder upon which to make the ascent can see nothing but ladders, and every one condemned by all the rest.

Of course, if the beginner belongs to a club which is fortunate or unfortunate enough to have a "great example" to whom everyone looks up, the problem is automatically solved. Every beginner follows the master, which results in a number of lesser masters. Obviously this is not the course to be followed to grow. The destruction takes place early. The beginner or new member timidly submits some of his work to the "old masters" or "fathers" of the club, who give it a passing glance and then take out some of their own work to show how it should be done. This treatment is all right to use on some seasoned worker who has his mind made up; but as a rule, the new member has a timid heart which is easily crushed. The result is that he does not dare to show anything else until he has something that looks like the "work of the masters."

If there was but some way to allow the beginner to learn the medium—photography—and then work out his own course in using it! It is the writer's belief that nothing in photography is wrong if it is a sincere effort on the part of the worker. If it is sincere and the worker knows his craft—meaning that he can employ any of its mediums and technique at will—then I believe the critic to whom it is submitted should try to see and understand the message intended in the picture and try to encourage the beginner by helpful suggestions toward carrying out what was started. But, above all things, do not condemn, either directly or indirectly; because, after all, who knows what to condemn? I personally know men who fifteen years ago condemned everything but a certain type of work and today they are condemning that very thing.

I believe it is safe to say that Clarence H. White awakened the dormant instinct of creative or selective vision in more photographers than any other one person. If, during his print criticisms, he did not like a certain thing in a student's print, he would say, "I almost think it would have been better." Just analyse that—"I almost think"! He didn't even admit that he actually thought what he was going to say, but omitted the objection and offered an alternative instead. He always inspired and never crushed the faltering start of a beginner. He pointed the way for each individual, which is proved by the fact that the work of each graduate has a distinct character of its own which makes it recognisable at a glance, while not a single one resembles that of Mr. White, who was truly a master of his time.

IRA W. MARTIN, *President, Pictorial Photographers of America*, in *The Groundglass.*

THE EDITOR'S CORNER

We Quote an Editorial and a Poem

On this page we have given space to a short editorial and a poem which appeared in the *New Era*, the monthly publication issued at the U. S. Penitentiary, Fort Leavenworth, Kansas. This splendid little magazine is an inspiration not only to those who live behind the grim prison walls but to all outside who are privileged to receive it. It is a tribute to the editor, Dr. Frederick A. Cook, who is doing a remarkable work. We doubt that any of our readers will find a more beautiful reference to clouds than the one we take pleasure to reprint on this page. As lovers of all beauty in nature, pictorial photographers will understand this editorial.

In the same little publication we found a poem which we reprint because we know that our readers will agree that one of the greatest needs in the world today is just being human instead of cold, hard and critical. How true it is that the really great men of the world have usually been great enough to be human. Even in photography, there is opportunity to be human and to speak the kindly word of merited praise when good work is done at the camera club, the salon or in the studio. It in no way lessens our value in the eyes of others to say a kind word to our neighbor when he is struggling over the same road we have travelled. It is well to strive for honors and the applause of the public; but such honors, and even the most tumultous applause, are but dregs in our cup when we forget to be human.

We admit that all this is not very photographic nor perhaps of any practical value; but we have noticed that those pictorial photographers who have reached the heights have, in most cases, turned back many times to help others to climb as high as they. They never forgot what the human touch had done to help them on to success.

Clouds

In dealing with things beautiful, how shall we appraise clouds, daily wonder-workers to all humans, coming and going? Loved for splendor, feared for thunder and storm, but always interesting, always full of mystery, full of thrill of other worlds.

Composed of mist and dust, charged with electric energy, clouds freight the watery freight of earth over land and sea, bringing rain and shadow to protect burning earth and life. Even the snowfall is kindly, for it beautifies and befriends, holds down heat of the terrain and nurses roots of plants when asleep.

The floating glory of clouds—how little appreciated! When clouds disappear, deserts begin. Thunder and lightning, the most awesome phase of the vapor trains, render more blessing than damage. The air thus ozoned, freed of dust and gas, and the spray of liquid food for plants and animals—this goodness to all living things far exceeds harm done.

The sun supplies light, power, and heat; but without this messenger service, transport service, storage service, of God-sent clouds, life on earth would soon depart. Man's sense of a world beautiful is chiefly flagged by celestial splendor between blue of sky and brown-green of earth, plus cloud-modified sun fire. Without clouds visible and invisible, sunrise and sunset would be reduced to the chill of moon glow. When clouds disappear from the earth, circulating waters will disappear. Life will then go, atmosphere will crystallize. This old earth must then become a miniature sun or a frozen sphere. Clouds carry the soul of all life, and thus clouds carry the source of all that nature means to us on earth or in Heaven.

Dr. Frederick A. Cook, in *The New Era*.

The Human Touch

It's just the little human touch,
  That makes the game worth while;
The little helpful words of praise,
  The small and cheery smile.

Let success crown your efforts and
  You're near the higher peak:
The Lord be thanked for kindly words
  Men did not fear to speak.

When troubles daunt and sorrows sway,
  And all the world seems wrong;
When sunshine is obscured by rain,
  And silent is all song,

It's mighty hard to pull ahead
  When hope is almost gone;
But little words like these have helped—
  "Good work, old man, keep on!"

It does not take much time to say,
  A word or two of praise,
And yet uncounted worth is there,
  To help through cheerless days.

And oh! the hearts that have gained hope,
  When life was drear and bleak,
For the kindly words, the cheering words,
  Men did not fear to speak.

B. G. M., *in The New Era*.

How They Return 'Em in China

We have read thy manuscript with infinite delight. By the sacred ashes of our ancestors, we swear that never before have we reveled in so enthralling a masterpiece. If we printed it, we should henceforth be obliged to take it as a model, as a standard of quality and achievement, and henceforth never print anything inferior to it. As it would be impossible to find its equal in 10,000 years, and we have to go to press with our poor, uninspired magazine once a month, we are compelled, though shaken with sorrow and blinded with tears at the necessity, to return thy divine manuscript, and for doing so we ask thee a thousand pardons.

The Editors.

[We are indebted to one of our good friends, Mr. Clifton Adams, Miami, Fla., for this suggested method of rejecting a manuscript.—Editor.]

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THE MONTH IN APPLIED PHOTOGRAPHY

C. B. NEBLETTE, F.R.P.S.
Division of Photography, A.M., College of Texas

More About Photography in Astronomy

THE picture of a gray-bearded astronomer seated at the eyepiece of a huge telescope patiently studying the stars, observing their positions, motions, and so on, is an engaging one, but one which, like many others, is only partly true. A certain amount of direct observing is still done, and is not likely to be discontinued for certain objectives; but, except for a few very special purposes, nearly all observing is now done photographically. Observations which require the older astronomers to gaze hour after hour into the telescope are now obtained more completely and accurately by measuring in daylight the photographic plates obtained by exposures of far less duration of time than the tedious eye observations formerly required. By this means, exact maps may be made of the heavens at any hour, and the precise position of every star will be recorded in a fraction of the time that would be required to map even the largest stars of the field. With long exposures, it is possible to reveal clearly that which can be seen only with the greatest difficulty, or not at all. Celestial bodies have been photographed and studied in detail which astronomers have never seen and are unlikely to see until much larger telescopes are built than those now in existence. With the 100-inch Hooker reflector on Mount Wilson, an exposure of four minutes on a Seed 30 plate will record stars down to the eighteenth magnitude. This is practically the limit for direct visual observation. But if the time of exposure is tripled, stars of the next lower magnitude are recorded; and, with a four-hour exposure, stars of the twenty-second magnitude have been photographed at times on Mount Wilson. It is estimated that nearly forty-five times as many stars can be photographed as can be seen under the same conditions.

Measuring the positions of these stars on glass plates with a microscope and measuring machine in a comfortable, well-lighted laboratory is much more convenient than study and measurement in the rather inconvenient position at the telescope. Moreover, plates may be measured at any time, night or day, in clear or cloudy weather, so that full use may be made of good observing nights to obtain the records. Finally, the negatives may be stored away, thus forming a permanent record which can be referred to at any future time to check errors, to re-examine points of doubtful validity, or to determine what changes, if any, have taken place in that portion of the sky. Nearly three-fourths of a century ago, Dr. E. C. Pickering of the Harvard Observatory began the creation of a photographic library of the sky wherein are nightly recorded the positions, brightness, and spectra of thousands of stars. Thus, when a new star or other object obtains notice in any part of the sky, it is possible to trace it back, sometimes for several years, on the library of plates at Harvard.

Most of the stars which the astronomer secures on his plates are of but little interest, and it would be a waste of time and effort to try to study them in detail. Others, however, are more interesting, and some peculiarity renders them worthy of detailed study. The astronomer, therefore, sets himself to measuring the brightness, distances, and motions of these.

The brightness or *magnitude* of a star is the most evident indication either of its size or its distance. Estimates of stellar magnitudes were made by Hipporchus and appear in the "Almagest" of Ptolemy published over two thousand years ago. All early work on stellar magnitudes employed visual means; with the advent of photography, however, the latter began to be employed and is now almost universally used, especially for the fainter stars.

There are several methods by which the astronomer determines the magnitude of a star. One method consists in photographing for equal times of exposure the area in question, together with an area near the North Pole containing a number of stars ranging from Polaris to very faint stars the magnitudes of which have been determined by a variety of methods. The stars are represented on the plates as small dots with varying diameters, according to the brightness of the star. The disc is, of course, instrumental, due to aberration, light scattering, and photographic spreading, but with the same instrument and the same plate is constant. Consequently, when the diameter of the stars of known magnitude on the Polar Sequence plate has been measured and compared with that of those of the field in question, it is possible, by interpolation, to determine the magnitude.

Another method consists in the use of a comparison scale made by exposing a plate in the telescope to a given star for a succession of exposures increasing in geometrical ratio. The scale made in this manner is a group of images varying in intensity in a known manner. The scale is mounted in a comparison microscope and the star-image to be measured is brought adjacent to the two images it most closely resembles. By this means, it is possible to estimate magnitudes to an accuracy of one-tenth of the scale unit. Similar estimates of the sequence stars of the North Polar Standard Sequence with the scale enable the latter to be calibrated.

Where the stars are bright, there is still another method which may be used, known as the extra-focal method. Instead of exposing the plate at the focus of the telescope, it is racked in so that the plate intersects the image in front of the focus, producing discs rather than point images of the stars. It then only remains to measure the density, using a Hartman microphotometer, and from the density measures to calculate the brightness of the star. Magnitude cannot be calculated directly from densities, because the relation between photo-density and illumination is not a direct one but is modified by a factor known as the Schwarzschild exponent. Thus corrections have to be applied to all density-intensity calculations.

Of late, considerable use has been made of gratings made of fine parallel wires placed over the objective. When such a screen is placed in front of the telescope, secondary images are formed on either side of the central image. To each of these secondary images there has been deflected a definite proportion of the

incident light, this proportion being, for a given grating, a constant factor, depending upon the size of the wires and the distance between them. There is thus a constant difference in magnitude between the central image and the diffraction image on either side of it. There is, of course, the same magnitude difference between a given star and any other star whose central image is equal in size and intensity to the diffraction images of the former star. Thus, when the magnitude interval of the grating has been determined, it is a comparatively simple matter to determine the magnitude of all the stars on the plate. The advantage of this method is that the secondary images are produced at the same time as the central images and the transparency of the sky and other such variable factors are excluded. A minor disadvantage is the amount of light stopped out by the grating.

The method employed by the astronomer for measuring the distance of the stars is precisely the same as that employed by the terrestrial surveyor. A surveyor, when he wishes to determine the distance from a given point, which we will call *A*, to a distant point *C*, first lays out a line *AB*, the length of which he measures accurately. This he calls the *base line*. Next setting up the transit at *A* and at *B*, he measures the angles at *A* and *B* of the triangle *ABC*. Now he has the two angles and the length of one side of the triangle *ABC* and it is simple matter to calculate by elementary trigonometry the length of the line *AC*.

The greater the distance *AC*, the smaller is the angle at *C*, and thus to measure distant objects the base line *AB* must be longer than for objects which are near. For the surveyor, a base line of a hundred yards is quite sufficient, but no distance which could be measured on the earth's surface would be sufficient for the astronomer, whose distant point is millions of miles away. But the earth each year swings around a vast orbit, and this gives the astronomer a base line which is sufficiently long for him to calculate the distances of many of the nearer stars. Each six months the earth is on the opposite side of its orbit, nearly 200,000,000 miles from its position six months before. Observation of the position of a near-by star in the sky at this time, when compared with observations made six months from now, shows a certain amount of displacement in the star as compared with fainter and more distant stars in the background. The nearer the star the greater that shift will be. The amount of the displacement is a measure of the distance of the star and is referred to by astronomers as the parallax.

Suppose that the astronomer wishes to determine the distance of a certain star. More likely it will be a fairly bright star, which means that, other things being equal, it is relatively close to us, as stars go. Near to this star will be a number of others which are very small and in various positions. These will, therefore, show little, if any, change in position, regardless of the position of the earth in its orbit.

Then, if we can obtain a number of photographs of the region around the star at various seasons of the year, careful measurement of these plates will disclose any shifting in the position of the star relative to the others in the field of view. From these measurements one can, after somewhat lengthy calculations, obtain the distance of the star. It will not be in miles, but in units of the distance of the earth from the sun. As this has been calculated to a satisfactory degree of accuracy, the distance in miles can be determined from this.

This method of measurement is, of course, subject to error, due to the movement of the small stars used for comparison. But we know of no better method. Determination of stellar "parallaxes" from photographic plates, however, is much less subject to error than visual observation, because in the first case a comparatively large number of small stars can be used in determining the amount of shifting of the star in question, while in visual determination the position of each star must be measured at the telescope and this limits the number to three or four at the most. When using photographic plates, however, some ten or twelve stars may be used for comparison and the chances of error diminished.

Errata

In the note on "Photography in Spectrum Analysis", appearing on page 105 in the February, 1930, issue, the following corrections should be made:

Column two, page 105—in the first paragraph 0μ715 and 0μ987 should read 715$\mu\mu$ and 987$\mu\mu$. The last line of the second paragraph should read 750$\mu\mu$. In the next paragraph 1000Å should be 1000$\mu\mu$ in both cases, and in the following paragraph 2200Å should read 220$\mu\mu$. This brings all the figures into millimicrons and corresponds with the illustration. Millimeters in the last line of the first paragraph on page 106 should read millimicrons. In the last paragraph 400 to 700A should be 400 to 700$\mu\mu$.

Dental Profession Uses Motion-Pictures

The recent 66th Meeting and Clinic of the Chicago Dental Society serves to throw interesting light on the increasing extent to which motion-pictures are being used in the dental profession.

Whereas only a year ago the dental movie was championed by a mere handful of pioneers, this year, at the Chicago meeting, no less than ten reports were illustrated with 16-millimeter motion-pictures, while in another part of the convention building a special room was devoted exclusively to a three-day projection program of thirteen different dental and general health films. Some of the Chicago leaders are already contemplating an arrangement for the next convention whereby any practitioner having a film of his own will be able to show it in a special "movie room" provided for this purpose.

An outstanding film shown at the meeting by Dr. Hugh W. MacMillan of Cincinnati, on "Physiology of Mastication", was of particular interest, due to the fact that he made every bit of it himself with his own Filmo equipment—his own titles and animation and photography. Truly, an example and inspiration to those of his colleagues now embarking on this type of work!

Dr. Donald E. Smith presented an illuminating film, "Pontic and Fixed Bridge Work", made in the University of Southern California, and Dr. W. W. Masson of the University of Denver showed a painstaking work which should rank among the highest examples of professional films. These are just a few of the films displayed.

The motion-picture film can make an important contribution to the dental profession. Any question of technique can be presented clearly, comprehensively, and dispassionately. The easily operated amateur movie-camera serves as an admirable means of making permanent records of interesting cases.

Photographer: "My printer whistles while he works."

Portraitist: "You're lucky—mine only whistles."

Thru the Darkroom Door.

XUM

THE PICTORIAL EDUCATOR

ARTHUR L. MARBLE

Communications intended for the editor of this department should be addressed to him, at Utah State Agricultural College, College Hill, Logan, Utah.

Teaching With Talkies

From the day that talking pictures were first developed, forward-looking people have recognised in the invention an invaluable aid to education. The advent of sound has interested thousands of people in the teaching possibilities of pictures where only hundreds were so interested in the silent movie. Talkies for the classroom are no longer an idle dream of the theorist; they are within our grasp, and await only a few technical improvements to make them as fundamental in the equipment of the modern school as books and pencils and paper. With this prospect in view, it is encouraging to know that the great commercial organisations that made the talkie possible are now joining forces with educators to prove the real possibilities of this new mode of instruction.

One of the finest film demonstrations of this kind was produced last fall through the joint co-operation of Mr. William Lewin, an instructor of English in the Newark (N.J.) Central High School. Dr. Harry D. Kitson, Professor of Education at Teachers' College, Columbia University, and Colonel F. L. Devereux, General Manager of the Department of Educational Talking Pictures of Electrical Research Products, Inc. These men were in charge of the making of a talking film to demonstrate some of the services talkies might perform for our children.

In the first exhibition, Dr. Kitson appears as a master of ceremonies. Introducing the first event, he says: "Beginning with the school year 1930–31, talking pictures will be adopted by some of our most progressive schools and colleges in an experimental way. The possibilities of the talking film as a vehicle for imparting information are now being studied by educators and motion-picture engineers with the view to working out the beginnings of a program in this field. The material about to be presented to you is merely suggestive of the possibilities of this medium of instruction."

He then calls attention to the opportunity of the talkies in vocational guidance. Then, to illustrate the point, there flash upon the screen sound-pictures depicting the work in a newspaper plant, an automobile factory, and a carpet mill. Our guide then introduces us to leading figures in the world today, and lo! we see and hear Mr. Lloyd George, Mr. Bernard Shaw, Ambassador Fletcher, and Signor Benito Mussolini. After the appearance of these "speaking likenesses", there come to life on the screen three American statesmen, Taft, Coolidge, and Hoover.

In conclusion, Dr. Kitson, the talkie impresario, says: "Here, then, is a great modern invention which science has developed as an aid to education. Telephone engineers have given the talkies to educators. How shall this new medium of instruction be used? How shall it be applied in cultivating a better international understanding, in the development of a finer citizenship, in the teaching of health, in the standardisation of our English speech, in the improvement of the quality of instruction in schools everywhere, in vitalising the teaching of virtually every subject in the curriculum: geography, chemistry, physics, biology; history and the social sciences; all languages and literatures; manual training; home economics; music and art; commercial training?

"The talking picture is ready to give millions of students the benefit of the influence of our most successful teachers, whose personalities will be carried from the classrooms in which they move to the ever-widening sphere of world-interest, from the big university to the little schoolhouse, from this generation to future generations, so that we may find an ever greater inspiration in the spread of American ideals and the development of American education."

An Invaluable Pamphlet

To anyone using or planning to use the stereograph for classroom use, I can recommend a little eight-page pamphlet "The Stereograph as a Visual Aid", by Dr. Joseph J. Weber of the University of Arkansas. Dr. Weber divides his discussion into two parts, the first half dealing with psychological principles involved in learning and experience. Dr. Weber shows that the stereograph is the best practical photographic medium for the expression of solidity, naturalness, and depth. To show the value of the stereograph as an aid to learning, the author cites one of his own experiments conducted at Lawrence, Kansas, with one hundred and fifty pupils, from grades three to six. The test shows that stereograph pictures, correlated with lessons on the manufacture of glass-bottles and the hemp-industry, results in a gain of learning of practically eight per cent. Dr. Weber, describing the best method for using the stereograph, states that it is most helpful when used as a classroom reference, like a reading source. The use of the stereograph in group instruction is not encouraged.

In the last half of the booklet, the author takes one of the stereographs from the Keystone View Company's "Primary Set" devoted to the Maple Sugar Industry, and with the picture as a basis shows how it may be used in language, nature, and geography study.

Dr. Weber summarises the work with the following:

1. A verbal lesson aided by correlated pictures effects more learning than the same lesson unaided.

2. Only one picture per day can be studied intensively and with distinct advantage to the pupils.

3. If other pictures are examined besides, they must be very closely related to it. Otherwise they detract.

4. While the stereograph does not readily lend itself to group instruction, it is the best visual aid we have for individual study.

5. The stereograph utilises the principle of binocular vision. This creates an illusion of frozen reality.

6. Because of their realistic effect, stereographs have the power to provide visual vicarious experiences.

7. Vicarious experiences are almost as instructive as real experiences, which form the basis for all learning.

8. Children learn mainly through self-activity in response to challenging situations.

9. For most effective learning, self-activity must be actuated and guided by an internal purpose.

10. Visual aids promise to advance civilization.

Reprints of "The Stereograph as a Visual Aid" may be secured from the Educational Screen, Inc., 5 South Wabash Avenue, Chicago. The price is fifteen cents.

Will Movies Supplant the Teacher?

WHEN Thomas A. Edison made his oft-quoted statement to the effect that motion-pictures would become classroom teachers of the future, the thought was greeted with widespread discussion and criticism.

The inventor's remarks were interpreted by a few well-meaning souls to signify that the movie would revolutionise education by making school-days a perpetual holiday. Others foresaw in this the terrible omen of the eventual substitution of machines for human beings. They visioned school-teachers deserting their classrooms, leaving in charge robots synchronised with sound and music in such a way as to sing and dance and talk for the edification of hopeful youth.

So far as we are able to learn, Edison has never either denied or fully explained his statement. But reason alone would indicate that while movies undoubtedly will become useful classroom auxiliaries of the future, they can probably do nothing more revolutionary than to eliminate dry, uninteresting, uninspiring instructors of the pure lecture type. And what are our reasons for believing that good classroom teachers can never be displaced by machinery?

In the first place, we believe that living, breathing personality is the beginning and end of education. A first-grader learns to read not by gazing long at either books or pictures. No! the child would be lost without a flesh-and-blood leader, who with a thousand demonstrations of sounds and symbols, teaches the child to react to the world of letters. All change and adaptation in the pupil results from positive activity on his part.

Books, models, specimens, charts, and motion-pictures are all valuable instruments for imparting vicarious experiences; but, unless we react to them and undergo a positive change through contact with them, our time has been worse than wasted. The great duty of a classroom teacher is to guide the child in his own individual attempt to get meaning from his environment. Now, passively viewing an educational film may cause the child to make definite adaptations without any aid from a teacher. A good picture may answer to his satisfaction many questions in the child's mind; but what about the dozens of equally important questions that arise from the new film experience? Who other than a human being can lead the pupil to a solution of these problems?

Suppose a class in current events is shown a sound picture of Mr. Ramsey MacDonald speaking at the recent London Naval Disarmament conference. The class enjoys meeting the Prime Minister and even understands his address. After the film has been shown twice, the lights are switched on. Then the teacher comes to the fore with an inquiry: "Are there any questions?" Indeed there are; for example: "What can Mr. MacDonald do for world peace?" What was the result of the London Conference?" Who or what can give an answer to these and many other problems—the all-but-living sound-film? Absurd! Here is a real job for a teacher.

So we are forced to the conclusion that although movies are on their way to serve alongside books and blackboards, the sympathetic and helpful teacher—like Tennyson's brook—will go on forever.

Government Produces Talkies

FOR some time it has been known that the Extension Service of the United States Department of Agriculture is planning to produce talking pictures for the use of county agents and Government demonstrators throughout the country. Progress in the work was not feasible until satisfactory and economical portable projectors could be obtained. One type to be recently purchased by the United States Department of Agriculture is the Stan-a-phone, which is manufactured by the Stanley Advertising Company, 220 West 42d Street, New York City.

Mr. C. A. Lindstrom, Associate Chief, Office of Motion Pictures of the U. S. D. A., makes the following statement: "We have produced one experimental sound picture, 'The Forest and Water'. It is not yet available for distribution, however. We hope during the coming year to produce one or more additional sound pictures.

"Our distribution of pictures is mainly through the county agents, using the portable equipment to reach meetings, etc., in rural communities. Until a way is found for them to project sound-pictures, we do not expect to go into the production of them to any large extent."

Still Films in Color

EASTER-TIME is second only to Yuletide as an appropriate occasion for special attention to the pictorial treatment of the life of Christ, which is a reminder that one of the most beautiful series of still films ever produced portrays the biography of the Master in full color. The Society for Visual Education, whose address is given above, distributes several sets, two of which I have seen. Set No. 159, "Life of Christ from great Paintings", gives fifty incidents, chronologically arranged, from forty-two painters of religious subjects; and Set No. 503, "Hoffman's Life of Christ", consists of twenty-eight narrative pictures from the well-known master, Henry Hoffman. Both of these sets, in full color, really do justice to the original paintings.

When Dreams Come True

A COUPLE of years ago, I was a guest in the projection-room of one of the film-distributing centers of Pathe Exchange, Inc., where I had my first glimpse of the "Chronicles of America Photoplays", that outstanding series on American history. Ever since that time, I have thought so much about the "Chronicles" that they played a leading part in one or two departmental dreams. One of these was expressed several months ago in this column, where it was explained that inasmuch as the "Chronicles" were available only in thirty-five millimeter films, users of the popular sixteen-millimeter projectors were unable to use them. The plea for copies on smaller film was written, while it was fully realised that many obstacles other than expense undoubtedly stood in the way to hinder the early reprinting of the "Chronicles" on sixteen-millimeter stock.

But now there is a pleasant surprise in a recent announcement of the Yale University Press Film Service that all the "Chronicles of America Photoplays" are now available in "Home-movie" size. At this writing, however, a nation-wide system of distribution has not been fully completed. Full information regarding prices and nearest library of the new films may be obtained by addressing Mr. J. Irving Greene, Director of Distribution, Yale University Press Film Service, 386 Fourth Avenue, New York City.

XUM

LONDON LETTER

CARINE AND WILL CADBY

Of all the months in the year, February seems to be the close time of the photographer. We have, by then, rather wearied of winter-subjects and are already making plans for the spring. But, as in other years, spring, after raising our hopes by producing snowdrops, crocuses, and anemones, suddenly alters her mind, the temperature drops quickly, and we are in midwinter once more. Now, however, we need not pack our cameras away too far, for the cold cannot last long, and we know this sharp spell is but the dying spasm; and with rays of really hot sun penetrating the frosty air, we feel that spring is really close at hand. It is no wonder that we, in England, want to hurry over this bleak bit of the year, for we get all the inconveniences of winter without any of its pleasures, like skating, tobogganing and so on; also, an English spring is filled with compensations and can be serenely beautiful.

Luckily or unluckily, we have had no chance of getting snow-photographs this year; for we have not even seen a flake. There have not been many, either, in the illustrated press, and we have enjoyed those in Photo-Era Magazine all the more. One of the evidences of this shortage has been that *Country Life*, one of our oldest and best-established illustrated weeklies has just used one of our Swiss winter-photographs again—a full page, too. It appeared originally some years ago, and represents the venue of a ski-jump on the steep slope of an alp. It was a difficult subject to get and it is gratifying to see it so appreciated; but had the editor consulted us before publishing it again this year, we should have been obliged to tell him it was obsolete. It was delightfully spectacular to photograph, but too dangerous, the slope and outrun being too steep, so that it was done away with.

There are some photographs that have a long life and can stand a lot of wear. They may not be our best work, they most probably are not; but they are popular and meet a demand. If we could only guess what would be best sellers, how busily we all should set about producing them! In many cases a best seller is a fluke. For instance, there is the well-known "Wheel in the Air". We do not know if this popular subject has penetrated to the States yet; it represents a small car turning the corner of a racing-track, while, on the driver's left, high up in the air, is seen a wheel. It was a wonderfully lucky snapshot made during a trial when the rear axle snapped and one wheel was shot up into the air. It earned £150 (about $720.50) for the photographer, we heard, and is probably going on raking in the shekels.

We produced one of our best sellers also quite by chance. When in Switzerland one winter, a friend rushed into our room and said, "Do look out of your window; there are two such jolly-looking small boys marching about with icicles!" One of us looked out of the window, while the other instinctively made a grab for the camera. When we got outside, there they were, singing and marching up and down, holding huge icicles like swords over their shoulders. We called the photograph "The Icicle Soldiers", and it became such a hardy annual in the press that at last we grew ashamed of its repeated appearances, feeling that others, like ourselves, must be heartily sick of it; so we sold it outright and it finished its life on a calendar.

But it is not always the easily come-by fluke that proves to be a gold mine. Sometimes it is a very hard-earned success; and, somehow, when this is the case, there is more satisfaction in it. It seems fairer that what has cost much thought and labor should turn out a success rather than the chance snap which has only needed quick perception and action. For, after all, apart from these lucky exceptions, it is hard work that counts, and we can record quite a number of subjects that we have thought over, dreamed about, and been determined to get. We have risen early and tramped far to obtain a particular effect of light and shade. We have returned home many times empty-handed; but we have in the end fixed our dream in realities that have been among the things that we can bear to see again after a lapse of time, and that do not fill us with confusion when we meet them unexpectedly—as we did one of them recently—framed on the wall of a friend's house. The pleasant complacency felt on occasions like this makes up a good deal for—well, the sinking feeling which affects us when we are confronted with some of our early "masterpieces".

We lately visited an acquaintance who has carried out the whimsical idea of decorating his walls exclusively with his own photographs. The idea was at first a little staggering. How can a man, however gifted, we thought, be so entirely satisfied with his own efforts as to exclude all others; and, day by day, be confronted with subjects and treatments some of which, at least, must surely fail to stand the severe test of time and continual exhibition?

Could anything be more boring? But as we became accustomed to this exaggerated form of self-expression, our criticism was modified. There were three small rooms, all with plain walls. Each contained a collection of prints: portraits, landscapes, and still-life subjects. An unobtrusive card giving the years during which the work had been produced hung in each room; so as one walked through, a bird's-eye view of the photographer's career was glimpsed. It was easy to see how, from early and often crude beginnings, the man had developed into a pictorialist of no mean order.

Being the work of one man, there was a continuity and certain harmony in the whole effect. It was all very interesting and, of course, could not fail to be an egotistical exhibition, for it was a human document in pictures. The photographer, being a comparative stranger, we were ignorant of his private life. "I don't think he is married", said one of us after we had left. "I'm sure he isn't", said the other. "No wife would let him do it."

The editorial in last month's Photo-Era Magazine, "Taking It On the Chin", opens up the question of photographers and photographic periodicals, and it is certainly a problem. Why are they as a race so indifferent to the written word? Lately, when we were talking to an acquaintance about an interesting and instructive magazine—Photo-Era, as it happened—she staggered us by exclaiming, "But whatever is there to say about photography?" And she had been using a Brownie camera, for two years!

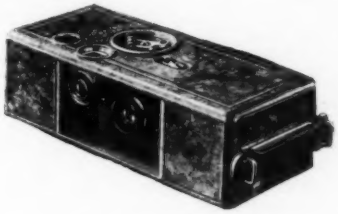
WHAT'S NEW?

A department reserved exclusively for the announcement and description of new photographic goods and services

The New DeVry Still Camera and Projector

SOMETHING entirely new in cameras has been produced by the Q. R. S.-DeVry Corporation in the little DeVry Still Camera, an embodiment of simplicity, beauty, and economy. The use of standard motion-picture film is not new; but its application to still photography is a comparatively new development and is proving to be very popular with amateur and many professional photographers.

For the photographic tyro, a more fool-proof outfit could scarcely be dreamed of. The F/7.7 lens is fixed



THE DEVRY STILL CAMERA

focus, and there are only two adjustments to make before tripping the shutter on any subject at any distance: wind the film, and set the shutter for either time or instantaneous. With this camera it is impossible to make a double exposure, inasmuch as the act of winding the film also sets the shutter for the next exposure, which is made by pressing lightly on the folded film crank.

Most people, on first examining the DeVry, remark on the beauty of the brown imitation onyx marble

ACTUAL SIZE OF PICTURE

metal case. A tiny red window near the shutter-lever enables the operator to tell at a glance the number of pictures left in the 40-exposure roll, which, if necessary, may be used up within twenty seconds' time. Film for the camera sells for eighty-five cents a roll, making the cost of each individual picture just a trifle over two cents each. An F/7.7 short-focus anastigmat lens is the usual equipment; but for those who desire a faster set-up, a Graf F/3.5 is available.

A splendid team-mate for this machine is the DeVry Still Projector, Model K-2, which throws well-illuminated screen-pictures as large as ten feet in width. The camera serves as a film-carrier in projecting pictures, although an independent carrier is obtainable.

THE DEVRY MODEL K-2 PROJECTOR

As is the case with most still projectors, Model K-2 shows either horizontal or vertical pictures.

Both the camera and projector are manufactured by the Q. R. S.-DeVry Corporation, 333 N. Michigan Avenue, Chicago. This well-known company has contributed much to the present successful use of still and motion-pictures as part of the educational system of the United States and Canada.

New Sport of Gliding Employs Motion-Pictures

THE popular sport of gliding, which recently won the interest of Colonel Lindbergh, when, at San Diego, Calif., he made an initial flight of half an hour, attaining an altitude of 500 feet, has not been slow in making use of motion-pictures.

Lindbergh, in his San Diego flight, used a glider manufactured by William Hawley Bowlus, who was the construction superintendent for the builders of the *Spirit of St. Louis*, in which the Colonel made his historic airplane flight to Paris.

Mr. Bowlus, in his glider flights, has used a Bell & Howell Filmo camera to make motion-pictures from the air by attaching the camera to the under side of his glider plane. In this way he has been able to secure invaluable records of his flights.

In order to obtain data as to take-offs, wind-pockets, and similar factors in gliding, Glenn Bowlus, a brother of the glider champion, and an enthusiastic Filmo user, has made it a point to make motion-pictures of glider flights as seen from the ground.

Gliding is becoming extremely popular in this country. In addition to the sports-interest, many prospective airplane pilots are learning to master the early steps of aviation by first taking up gliding. The motion-pictures made from the ground by Glenn Bowlus have been especially valuable in instruction work.

XUM

HERE, THERE AND EVERYWHERE

To ensure publication, announcements and reports should be sent in not later than the 5th of the preceding month.

Photo-Era Trophy Cup Scores

THE Portrait Competiton which ended February 28, 1930, was the largest that we have had for many years. A glance through the list of contestants reads almost like the catalog of some large salon. At a time when we had been told that interest in competitions was virtually dead, we are glad to report the facts in justice to the many men and women who are sincerely interested in pictorial photography and in PHOTO-ERA competitions. Certainly, we offer no great rewards to our contestants. Yet, month after month, the number of entries keeps growing larger; and in certain competitions, there are more prints than we have had in many years. We do believe that much of the success of these competitions is due to the good-fellowship which seems to be apparent. There is no formality in one of our competitions, any more than there would be among a group of friends who happened to be interested in the same thing. After all, we are learning together that the art and science of photography offers something new and inspirational every day. It is for us to make the most of our opportunities to grow individually and collectively.

The First Prize in the Portrait Competition was won by Dr. B. J. Ochsner, not a camera club member; the Second Prize by William F. Happich of the Photographic Society of Philadelphia; the Third Prize by J. Blair Anderson of the Cleveland Photographic Society. The First Prize in the Beginners' Competition was won by Arthur M. Underwood and the Second Prize by O. M. Liang, neither of whom are members of a camera club. With regard to Honorable Mentions, the Fort Dearborn Camera Club received nine; the Cleveland Photographic Society, six; Photographic Club of Baltimore, four; Episcopal Academy Camera Club, four; Brooklyn Institute, Lansing Camera Club, and Syracuse Camera Club, one each. A reference to the scores below will show that competition is becoming keener and that those clubs which appear to be in a second grouping are fighting hard to get into the first group. The three clubs now at the head are running quite close together. A prize, or a few Honorable Mentions, can turn the present standing completely around. The race is well worth watching and well worth entering. The number of prints submitted and the many letters we receive in connection with our competitions offer convincing evidence that many of our readers really do have a good time participating in the competitions. It is also noticeable that many pictures which receive awards in PHOTO-ERA Competitions subsequently are hung in many of the leading salons and exhibitions.

According to our records, the standing of the clubs, as of March 8, 1930, is as follows:

Fort Dearborn Camera Club	30½
Photographic Club of Baltimore	20½
Cleveland Photographic Society	14
Episcopal Academy Camera Club	5
Photographic Society of Philadelphia	2½
Syracuse Camera Club	2½
Toronto Camera Club	1½
Chicago Camera Club	1
Lansing Camera Club	½
Schenectady Camera Club	½

George Eastman Awarded Medal of American Institute of Chemists

OFFICIAL announcement was made recently that the American Institute of Chemists had awarded its medal "for noteworthy and outstanding service to the science of chemistry and the profession of chemist in America" to Mr. George Eastman.

In making this announcement, Dr. Frederick E. Breithut, president of the Institute, referred to Mr. Eastman as "one of the greatest lay-scientists of the present day. Started as a small enterprise by an 'amateur photographer', as Mr. Eastman still calls himself, the growth and development of the Eastman Kodak Company is an industrial romance which shows the enormous possibilities of the intelligent application of chemical research to practical business.

"Mr. Eastman's research work toward simplifying and popularising photography was begun in 1883 with his first attempts to perfect the now well-known roll-film, originally invented by Hannibal Goodwin, and it was a chemical discovery—the use of nitro-cotton dissolved in the proper solvents—which marked the turning point of his career.

"One of the first buildings at Kodak Park was a chemical laboratory, and throughout the entire development of his work, Mr. Eastman has always availed himself of the services of trained chemists and whatever chemical processes could in any way be useful in his projects. A research laboratory, one of the greatest in the country, was established in 1912 to deal specifically with the fundamentals of photography, and to carry on investigations along all lines of interest to the company. Its accomplishments, in chemistry and physics as well as in photography, were so effective that at present the Eastman Kodak Company is practically a self-contained chemical manufacturing concern. It operates plants for the manufacture of its own acids, silver salts, solvents, gelatine, large-scale production of cellulose nitrate and acetate for all kinds of films, and a unique mill for photographic paper.

"The most noteworthy service to American chemistry in Mr. Eastman's career was made in 1918, when he approved the establishment by the Research Laboratory of a department of synthetic organic chemistry to manufacture and supply the various synthetic organic chemicals required for research purposes in the United States. The primary object of this much-needed move was to ensure the complete independence of the United States in regard to these essential materials, and it received the co-operation and active support of both industrial and academic chemists throughout the country. Continued co-operation with all available sources of supply, and an active production program, have increased the number of available chemicals to over 2,600—a number of high quality organic chemicals greater than that of any other country. The value of this work was recognized publicly when the Synthetic Organic Chemical Manufacturers Association, in 1925, made Mr. Eastman an honorary member.

"Mr. Eastman has always recognised the great value to him of the chemists of the country and of the institutions in which they were trained. His gifts to the Massachusetts Institute of Technology may

perhaps be taken as a direct tribute to the chemists and engineers who came from there to assist him in the building up of his great business. In all, over sixty million dollars have been given by him to educational institutions, especially to the Massachusetts Institute and to the University of Rochester.

"The history of the Eastman Kodak Company shows what the application of chemical research can mean in the creation of new wealth in vast amounts. Many of our backward industries could profit by a study of Mr. Eastman's methods. Some of these industries do not yet comprehend what Mr. Eastman understood forty years ago. Mr. Eastman learned to apply chemistry to the control of the transformation of the materials which he used, and that knowledge has been applied by him, through the photographic science and art which is now a part of our daily life, to create not only wealth, but service and happiness for all mankind."

Camera Pictorialists of Columbus

An organization has been effected by a group of amateur pictorialists at Columbus, Ohio, under the name of the Camera Pictorialists of Columbus. E. G. Royer is president of the group.

"The purpose", according to Mr. Royer, "is the making of pictorial photographs for our own pleasure and for exhibitions as well. We hope to hold our first local show next winter; but we may be able to bring in some visiting exhibitions before that."

William C. Pryor is secretary of the Camera Pictorialists, and communications should be addressed to him at 60 Latta Avenue, Columbus, Ohio.

We welcome this new photographic organisation to the fellowship of the photographic societies in the United States and Canada, and we wish them every success in their undertaking.

The Cleveland Photographic Society

At the annual election of officers of The Cleveland Photographic Society, Inc., the following officers were elected for 1930: Ralph D. Hartman, president; Henry M. Mayer, vice-president; Edward J. Ryan, secretary; Lloyd Dunning, assistant secretary; John D. Marshall, financial secretary, and Richard Tappenden, treasurer.

This photographic society is one of the most progressive and well-equipped organisations in the United States, and its members have made their mark high on the pictorial and technical ladder of photographic success.

Academy of Motion-Picture Arts and Sciences

As the result of the formation recently of a "foreign production committee" through the medium of the Academy of Motion-Picture Arts and Sciences, representatives of various film-studios are co-operating today in a movement to solve the problem of converting American talking-pictures into the native tongues of the foreign countries in which they are exhibited.

This problem, it is said, is one of the most crucial facing the kinema industry today, involving the preservation of the great percentage of revenue on American-made pictures that heretofore has been derived from foreign markets.

Various experiments have been tried to determine a feasible method of making talking-pictures in the languages of other countries, and it is the purpose of the committee, newly formed through the Academy, to arrive at a simplified and standardized procedure on the subject.

The committee's preliminary activities, which will be executed with the co-operation of the Academy, will cover, according to present plans, an interchange of all information touching foreign areas; collective viewing of other studios' pictures; and assembling of authoritative data on abilities of linguists and foreign technical directors.

Among the fields of foreign language covered in the Academy meeting were Spanish, French, German, Czech, Polish, Hungarian, and Italian.

Photographers Association, Orange County, Calif.

Meeting in special session, the Photographers Association of Orange County recently elected the following officers to serve for the ensuing year: Edward W. Cochems was re-elected president; Henry J. Lyle, vice-president; Mary Betzsold, secretary-treasurer; Mary Smart, press correspondent.

The occasion also marked the first milestone of one year's successful progress. Much has already been accomplished along the lines of mutual co-operation and constructive propaganda. There is a growing membership which includes workers in varied lines, such as retouchers, commercial and portrait artists, and others.

The purpose of the organisation is to create among the profession a keener sense of mutuality, greater co-operation, heart-to-heart discussions on problems and triumphs photographic, the uplift and upkeep of the ethics and dignity of the art, and the promulgation of a constructive program of publicity aimed at educating the public to a better and higher conception and appreciation of true pictures.

The Association will carry out plans this year for a public exhibition of pictures by photographers in the county, and Mrs. Lorna Thompson and Mrs. Martha E. Butler were named as a committee to complete arrangements, select the date, place of meeting, and the pictures to be exhibited.

A special committee on progress was appointed, the members being Frank Collier, Anaheim; C. George Hedstrom, Fullerton; and Clyde Gilbert, Santa Ana.

"The Technique of Photography", a film begun by the Association last year, will be completed in a few months, the members having decided to resume activities on the film in the immediate future.

Mary Smart, *Press Correspondent.*

Society of Motion-Picture Engineers to Meet in Washington, May 5–8, 1930

The Society of Motion Picture Engineers will hold its spring convention at the Wardman Park Hotel, Washington, D.C., May 5–8, according to the announcement of the Board of Governors.

The various committees of the Society are already at work preparing a well-rounded program of papers and entertainment for the convention, and it is expected that this convention will be the most constructive and valuable yet held by the Society.

"While it is quite likely that details of sound-picture production will receive a large share of treatment", reports J. W. Coffman, chairman of Papers Committee, "the Society recognizes the fact that the industry is now well stabilised in sound-picture production and that the sound-picture is the standard picture today. The sound-technician is now regarded as an integral part of the industry rather than an outsider."

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Fort Dearborn Camera Club

THE first meeting of the new year was election night at the Fort Dearborn Camera Club, Chicago. When the votes were counted, it was found that the following officers had been selected to lead the club throughout 1930: President Dr. Max Thorek, F.R.P.S.; vice-president R. B. King; secretary K. Yamamoto; treasurer Morris Gurrie; directors W. C. Swett, Hugo Raeth, and Leonard Purin.

The annual election banquet, which is an institution with this active club, was a great success and was attended by thirty-seven members and guests.

Fort Dearborn Camera Club meetings are now held each Friday evening, rather than on Mondays, at 537 South Dearborn Street, Chicago.

The Eighth Annual Exhibition of the pictorial work of Fort Dearborn Camera Club members was displayed in the club rooms, 537 South Dearborn Street, Chicago, from February 28 to March 14, evenings and Saturday afternoons. Since the members of this club had been very active in pictorial photography during the past year, and since this exhibit represented the best work of each member, a truly fine display was obtained. The public was cordially invited to visit the club rooms and to see these prints.

The Annual Buddy Poppy Sale

EACH year the Veterans of Foreign Wars conduct their Buddy Poppy Sale simultaneously throughout the entire country during the week of Memorial Day to raise funds for the adequate maintenance of their relief activities.

Each genuine Buddy Poppy carries a copyright green label which identifies it as the genuine handiwork of disabled and needy ex-service men. The majority are made in Government hospitals through an arrangement with the United States Veterans' Bureau. In two hospitals alone, Hospital No. 81 in New York City and Hospital No. 108 in Northport, Long Island, approximately 2,000,000 are being made, and the poppy-making gives employment to patients through the greater part of the year. A national total of 6,000,000 Buddy Poppies will be completed in readiness for the opening of the Sale.

The endorsement of the President of the United States has been extended to the Sale each year since its inception nine years ago. Other endorsements of national significance include the General Federation of Women's Clubs and State federations; William Green, President of the American Federation of Labor; fraternal organisations; religious leaders; and business and professional organisations of outstanding prominence.

The Sale proceeds are devoted in their entirety to relief activities, a portion being allotted to the maintenance and expansion of the Veterans of Foreign Wars' National Home for Widows and Orphans of Ex-Service Men, in Michigan. The success of each succeeding Sale facilitates the erection of new buildings and makes possible the accommodation of additional children and mothers. The Home site covers 472 acres.

The Veterans of Foreign Wars was the first veteran organisation to undertake and successfully conduct the Poppy Sale movement on a nation-wide scale. The first V. F. W. National Poppy Sale was held in 1922, using French poppies made by women and children of the devastated areas. The following year, with a greater demand, the organisation had to resort to poppies made commercially. The present plan of manufacture was developed in 1924 in order to extend the relief afforded by the poppies to those men who were disabled and needy but still capable of this employment, and the V. F. W. Buddy Poppy factory was organised, where only those handicapped by war disabilities were employed in putting together the emblems.

This original plan has expanded annually with the cumulative success of the Sale and is recognized by the U. S. Veterans Bureau as a valuable adjunct to the occupational therapy work in the Government hospitals where the Buddy Poppies are made.

Talkies for the New York Institute

IN keeping with its policy of offering the very latest and most up-to-date instruction in motion-picture photography, the New York Institute of Photography is preparing to install a complete sound-recorder for purposes of instruction.

Due to obvious problems of instruction in this new art, none of the commercially available recorders were suitable. For this reason, the Institute is having constructed, at great expense, a recorder designed especially for purposes of instruction. It is expected that this machine will be placed in operation early in April. It will be used in conjunction with a standard Bell & Howell Professional Studio Camera.

While sound-recording is, at present, a matter of specialisation, the New York Institute has anticipated the time when all cameramen, industrial, expeditionary, news, and commercial, will be required to have a thorough knowledge of this new art.

Full details regarding this instruction may be secured by addressing the New York Institute of Photography at 10 West 33d Street, New York City.

A Jump for Life Caught by Eyemo

ANOTHER of the many outstanding newsreel feats achieved by the Bell & Howell Eyemo was scored in Chicago recently by this popular semiprofessional movie camera, when Joseph Sandman, a film broker, jumped from an eight-story window, in what is said to be the longest leap ever made in Chicago from a burning building to a fire net.

Because of the extreme adaptability of the hand-held Eyemo, Charles David, Chicago Daily News-Universal camera man, was able to keep the jumper in focus during the entire leap and to secure exclusive shots of this spectacular jump for life. These pictures were shown in Chicago Daily News-Universal releases in theaters all over the United States.

"Whew! I never knew I could have done anything like that", said Sandman after viewing the reel showing the performance in which he was the star, although his act was a bit impromptu. He turned pale, and cold sweat stood out on his forehead as he saw the pictorial evidence of his thrilling experience.

The pictures first show Sandman hesitating on the window-ledge, with clouds of suffocating smoke rolling all around him. Then, all other avenues of escape being closed to him, he jumps to the net and safety.

Miss Margaret Paine, a stenographer, also made the same jump, but was not so fortunate as Sandman. She received some serious injuries to her skull. The Eyemo also caught exclusive pictures of her.

Due to the fact that the hand-held Eyemo can get into action and be actually photographing a scene before the larger professional camera can be set up, it is able to secure many valuable pictures which otherwise could not be captured at all.

Charles E. Ford, newsreel editor of the Chicago Daily News, states that every camera man on his staff takes an Eyemo home each night in order to be in readiness for any short-notice summons.

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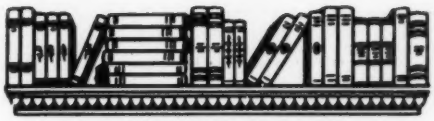

BOOK-REVIEWS

Books reviewed in this magazine, or any others our readers may desire, will be furnished by us at the lowest market-prices. Send for our list of approved books.

THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC, 1930. Edited by George E. Brown, F.I.C., Hon. F.R.P.S. 783 pages and 64 photogravure reproductions. Price, paper, $1.00; cloth, $1.50. Boston: American Photographic Publishing Company.

It may almost be said that the photographic activity of the new year cannot very well get under way until the well-known and welcome "British Journal Photographic Almanac" makes its appearance. Ever since 1866, the "B. J. Almanac" has been published in its present format as to size; but only in recent years have the illustrations in photogravure been added. The 1930 edition is filled with photographic lore which amateur and professional photographers will like to read. As always, one of the features of the book may be attributed to the advertisements. Probably in no other photographic publication will one find such a variety of equipment described by manufacturers in all parts of the world. The supply of "B. J. Almanacs" is necessarily limited, and we suggest that our readers place their orders for copies without delay.

LUCI ED OMBRE, 1929. An Annual of Italian Artistic Photography. 16 pages of text and 52 pictorial illustrations. Price, Paper, $2.50. Boston: American Photographic Publishing Company.

On several occasions we have expressed our approval of a photographic annual which is devoted exclusively to the best work of amateur and professional photographers in a given country. Otherwise, we believe such an annual is not truly representative of national photographic thought and effort. In the case of "Luci ed Ombre" we find a truly Italian product which reflects great credit on Italian pictorialists and on the publishers. Without a doubt, the illustrations are worthy of the study and emulation of pictorialists in all parts of the world. Virtually every type of subject is represented; and there is a dignity and strength throughout the annual which again demonstrates the fact that photography is an art as well as science.

PHOTOGRAPHIC PRINTING, Professional and Commercial, by R. R. Hawkins. 111 pages and 15 illustrations and diagrams. Price, cloth, $1.25. New York: Isaac Pitman & Sons.

For the most part, photographic printing and enlarging problems are virtually the same the world over. Modern equipment and supplies now reach the ends of the earth, so that successful principles and practice in England, France, or Italy may work as well in the United States and Canada. In "Photographic Printing", the author states frankly that his book is not for the experimenter but for those who make photography their business and livelihood. Theoretical considerations are not discussed; but no important detail with regard to handling photographic materials has been omitted. The book is divided into seven chapters, which treat the following subjects: Layout and Equipment, Preparing Negatives for Printing, Developing and Fixing Baths, Bromide Printing and Enlarging, Drying and Mounting, Toning and Doctoring Prints, and, finally, Chloro-Bromide and Gaslight Printing. There are many practical suggestions and little "tricks of the trade" which the author mentions; and these, one can readily see, are based on actual experience. As we have said, although the book is written for photographers in Great Britain, who are using British products and equipment, the principles and practical suggestions will apply anywhere in the world under similar conditions. We are confident that readers in the United States and Canada will find this new book well worth having.

THE ART OF PHOTO-ENGRAVING. Edited by Louis Flader. 64 pages, and illustrated by many halftones and diagrams. Price, paper, $1.00. Boston: Graphic Arts Division, Folsom Engraving Company.

We have reviewed a number of excellent books on photo-engraving in recent years. Their authors have known the subject matter thoroughly and scientifically. However, the average reader, who was merely seeking information in his spare time, often found it difficult to understand the technically trained author. Hence, there was, and is today, a demand for a book on photo-engraving which, more by diagram and illustration than text matter, would impart the elementary fundamentals which the average business man can understand and apply to his own photo-engraving needs. We believe that "The Art of Photo-Engraving" is just the interesting, helpful book that thousands of buyers of printed matter have been looking for, but have never found. Virtually the entire story is told by means of photographs, and reading matter is reduced to the minimum. As we read the book and study the illustrations, we learn how a half-tone is made, what kind of original copy is required for the best results, how pictures are reproduced in color, what different sized screens mean, how Ben Day is used, how different surfaces of paper effect the half-tone reproduction, what to avoid in preparing copy for the engraver, trade customs of the engraving industry, glossary of terms, and much other information. To our mind, this book should be in the hands of every person who has anything to do with editorial, publishing, or publicity work and the preparation of any form of illustrated printed matter. Copies may be obtained by ordering through PHOTO-ERA MAGAZINE.

XXIV SALON INTERNATIONAL D'ART PHOTOGRAPHIQUE DE PARIS, 1929. Société Française de Photographie, Paris. 11 pages text and 48 photogravure illustrations. Price, paper, $3.50. Boston: American Photographic Publishing Company.

With a doubt this is one of the outstanding photographic annuals because of the remarkable reproductions in photogravure and in various colors suited to the subject. The student of pictorial photography cannot fail to be impressed by the variety as well as the careful selection of subjects, and a thorough study of the illustrations will be of benefit. There are several illustrations of the modernistic type, and also many of the more conventional kind which never lose their appeal. The editors and publishers of this excellent French annual deserve the appreciation and compliments of pictorial photographers in all parts of the world.

MRS. PRO: "Why do you wear your hair so bunched over your ears?"

Mrs. Fane: "So I can't hear my husband making bromoils." *Thru the Darkroom Door.*

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THE AMATEUR KINEMATOGRAPHER

HERBERT C. McKAY, F.R.P.S.

The Camera's Eye

YES, it may well be supposed that someone will at once object to such a title, and in fact the lens is *not* the eye of the camera. The camera itself, in whole, is just a big mechanical eye, corresponding to our own eyes in most particulars, and in many of them even better than our eyes. Indeed, it is often remarked that our eyes, regarded as optical instruments, are perhaps the most poorly developed organ of special sense which we possess!

In the first place, we should realise the purpose for which the lens is used. There is some kind of belief that the lens acts very mysteriously to form an image. This is certainly far from the truth. The image is formed by rays of light following their natural paths. The secret of the lens function lies in the words "following their natural paths".

It is a well-known fact that photographs of rare quality may be made by using a pinhole instead of a lens. This is enough proof that the lens does not form the image. But, if we make use of two pinholes, we get two images; if we use five pinholes, we get five images; and so on until we can make use of a small sieve, each hole of which is passing its own image, so that we have a multitude of similar images, each slightly displaced with regard to all the others. This gives us a general blur with no detail or form. The function of the lens is to bring all of the images into coincidence at one definite plane! If we can bring all of the images together, we can discard the sieve entirely, thus having an infinite number of "pinholes", all overlapping, all projecting an identical image, with the greatly increased luminosity made possible by the large lens opening. The lens is superior to the infinitely small pinhole only in that it passes a large amount of light, thus making possible short exposures! The lens merely provides natural paths for a number of rays, all leading to a common point or focus.

The theory of the lens is beautiful; but, in actual practice, there are a great number of obstacles which prevent satisfactory use of the lens. The most grave of these obstacles have been overcome by patient experiment and research, but we still have certain limitations imposed. It is certainly necessary for every user of a photographic lens to understand the difficulties which have been overcome and the limitations which still exist, if he is to secure the best results from his lens.

The simplest form of lens we have is the reading glass or burning glass. While certain photographic results can be obtained from the use of such a lens, these results are extremely unsatisfactory. In using such a lens we should find that the various colors are not focused in the same plane. Thus, when a sharp visual image is obtained, an out-of-focus photographic image would result, due to the fact that the yellow-green is the most intense visual color-band and the blue-violet the most active photographic color-band. This fault of the lens is known as chromatic aberration. This fault is corrected by using a combination lens known as an achromatic lens.

The achromatic lens, often listed as a point of superiority, is really the cheapest and least satisfactory lens which can be used in routine photography. An example is the lens supplied in the cheapest box cameras. However, the finest lenses are also described as being fully achromatic. This means that this particular correction has been carried to the farthest possible degree compatible with the other characteristics of the lens.

Even the achromatic lens will not give a sharp picture. The rays passing through the edges of the lens are not focused at the point where the central rays are focused. This fault is known as spherical aberration. It is corrected in a manner similar to that used to correct the chromatic fault. This correction is made for objects situated directly in front of the lens. Often the corrected lens is not corrected for oblique rays coming from objects at one side or the other. In this case we have a spherical aberration of oblique rays commonly called coma. A point is distorted into a comma or comet shape when coma is present.

Single lenses corrected for spherical and chromatic faults will not render a square as such, when used with a diaphragm, but will render the rectangle with sagging or bulging sides, known as barrel and pincushion distortion. This is remedied by placing a single corrected lens on each side of the diaphragm. Such a combination is known as a double or rectilinear lens. This is the lens that was the most popular in photography before the introduction of the modern anastigmat type.

The rectilinear lens has two faults. Curvature of field is due to the fact that the focal plane of the normal lens is not a plane at all, but a segment of a spherical surface, a part of the inside of a huge ball, as it were. When this fault is present, a photograph sharply focused in the center will be slightly unsharp at the edges, and *vice versa*. This fault shows up very plainly when enlargements are made from negatives made with rectilinear lenses.

The other fault of the rectilinear lens is astigmatism. We are all familiar with the chart used by optometrists for making stigmatic tests. This chart has a series of radiating lines, similar to the spokes of a wheel. Many of us see the lines in one direction far more distinctly than the others. This is an indication of astigmatism in the eye. The same fault in photographic lenses makes it impossible to bring into sharp focus lines crossing at right angles. Either one or the other will be sharper.

When the two faults just described have been corrected, we have the modern lens, the flat-field anastigmat.

Since the introduction of this type of lens, every manufacturer of lenses has brought out anastigmats. Although these lenses are anastigmatic to a satisfactory degree and of a satisfactorily flat field, they are far from being of uniform quality. Indeed, many manufacturers make various grades of anastigmat lenses. As we will see later, the relative aperture or speed of the lens has a marked bearing upon the price for which

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the lens is sold; but among lenses of the same speed, there is a wide variation in price and in quality. Unfortunately, the price is no indication of the quality, as many high-priced lenses are inferior to the cheap ones. The best guide in making a lens-purchase is to stay with the products of such reputable manufacturers as Zeiss, Goerz, Schneider, Bausch & Lomb, Wollensak, Voigtländer, and other firms of similar standing.

In order fully to understand the meaning of the term "brilliance", we must take into consideration the phenomena of absorption and reflection. When light-rays pass through any transparent medium, there is a gradual loss of intensity due to the absorption of the light or dampening of the light-wave. Although this is of slight consequence in the small lenses used in motion-picture work, it is still an appreciable factor.

The phenomenon of reflection is one with which we are all more or less familiar. When light strikes a polished surface, it is bent back or reflected. Reflection follows certain laws with which we are not now concerned. When light falls upon the surface of a lens, part of the ray passes into the lens and a part of it is reflected. When the light ray strikes the opposite side of the lens, a part is reflected and a part passes on into the air upon the opposite side of the lens.

At every point where glass and air meet, reflection takes place, with a consequent loss.

If our lens is composed of two single lenses, we have four glass-to-air surfaces, with the consequent loss of light due to four reflections. As we have anastigmat lenses with as many as six separate elements, we have, then, twelve surfaces of reflection. Let us assume that the mean loss in such case is ten per cent. at each surface. The ratio of light passing each surface is then: 100% incident light = 90%—81%—72.9%—65.61%—59%—53.1%—47.79%—43%—38.7%—34.83%—30.347%—27.3123%. In such case, about one-fourth of the light falling upon the lens actually reaches the film. There are actually lenses in which the loss due to absorption and reflection runs as high as seventy per cent.!

Let us assume that we have a lens of fine quality, working at a relative aperture of F/3.5, with a total transmission of seventy per cent. Let us assume that we have another lens whose relative aperture is F/2.5. Practically, the aperture of the second lens is twice that of the first. We shall assume that in order to obtain this aperture, structural designs were used which resulted in a transmission of thirty-five per cent. for the second lens. In such a case, we should have to give the same exposure with both lenses, yet with the "faster" and more expensive lens we should face the difficulties introduced by the use of the larger aperture.

Those qualities of a lens involving the transmission-factor have been grouped under the one head—brilliance. It is vitally important in purchasing a lens to know something of its brilliance. This matter of transmission is one for which there is no established standard or unit of measurement. It is ignored by the manufacturers of lenses; but it renders absolutely meaningless the statement which is so often read in treatises upon photographic optics: *Regardless of all other factors, lenses of the same relative aperture require the same exposure with a given emulsion under identical conditions of light!* This statement is absolutely untrue. It is only true when we can add this sentence: *Provided the total transmission-factor of the lenses is the same.*

For example, there is an extremely fine lens whose extreme aperture is F/6.8. This lens, under identical conditions, requires less exposure than another lens of good quality whose aperture is F/4.5. As the relative apertures have proportional values of $(6.8)^2$: $(4.5)^2$ = 46.24: 20.25, which would indicate that the F/4.5 lens should require less than one-half the exposure of the F/6.8, it can be seen that this ignored factor is of great importance.

Finally, we come to a factor which is of quite recent introduction. The manufacture of photographic lenses depends upon a process of juggling advantages and making compromises. It seems to be an immutable law that any advantage gained is obtained only at the cost of other advantages. The most commonly known of these compromises is the fact that increase in aperture (speed) is obtained at the cost of decreased depth of field. The correction in high-speed lenses is a matter requiring the most delicate calculations. Among the most difficult corrections made is that of color. In some lenses of extreme aperture, the manufacturer assumed that such high speed would only be required under artificial light conditions. The corrections were therefore made for yellow light. As a result these lenses are not satisfactory for use in daylight. Along the same line it may be remarked that inasmuch as the usual (orthochromatic) photographic emulsions have strictly limited color-sensitivity, ordinary lenses are corrected only for the colors to which the usual film is sensitive! As a result, stock lenses are unsuitable for natural-color photography and, to a lesser degree, for special red-sensitized panchromatic monochrome work. This error is slight and the poor results are accepted as an inevitable part of the process; but the fault should be recognised for what it is.

Sound and More Sound

It seems that amateur talkies have been standardised upon disc, and many new devices have made their appearance recently for the production of sound-movies in the home. It may not be amiss to say here that the writer has repeatedly heard unusually excellent talkies made by amateurs by the sound-on-film method—synchronised films which have been pronounced by professionals and engineers to be fully equal to the best theatrical reproduction both as to quality of sound-reproduction and synchronisation. The films were made with a sixteen-millimeter camera of standard manufacture, and a well-known stock model projector was used in projection! However, as this device is not yet available commercially, we shall return to the disc.

The objection to the disc-reproduction has been the lack of suitable material for reproduction. This objection has just been overcome by the introduction by the Ciné Arts Corporation of an excellent series of synchronised short subjects which will give excellent results with any of the seventy-eight revolution-per-minute talking outfits.

This same Corporation is said to be preparing a series upon the standard 33⅓ R. P. M. theater-type disc. This is the logical thing to do, and the advisability of such standardisation has been demonstrated by one of the largest producers in the country. In our review of new equipment, an announcement is made of the Bell & Howell talking outfit for use with the Filmo. This outfit runs at the standard theater speed, has a sixteen-inch turntable, and is thoroughly professional. This means that reduction prints of any of the popular talking features can be projected upon this outfit, using the original professional records! Now, indeed, we may reasonably expect to have an adequate supply of talking films which may be projected in the familiar full reel of four hundred feet! We extend our congratulations to Mr. McNabb and his engineering staff!

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KINAMO S. 10 is the smallest 16 mm. movie camera!

In Kinamo S. 10, the smallest 16 mm. movie camera ever made, you have a combination of astonishing compactness of form and simplicity of loading. Kinamo S. 10 is spring driven, fits easily into the pocket, holds 33 feet of 16 mm. Kodak film, and is equipped with a Carl Zeiss Tessar 2.7 lens. And made by Zeiss Ikon, which is your guarantee of craftsmanship and internationally-recognized quality. Price $85.00 at your dealer. Carl Zeiss, Inc., 485 Fifth Avenue, New York, 728 South Hill Street, Los Angeles.

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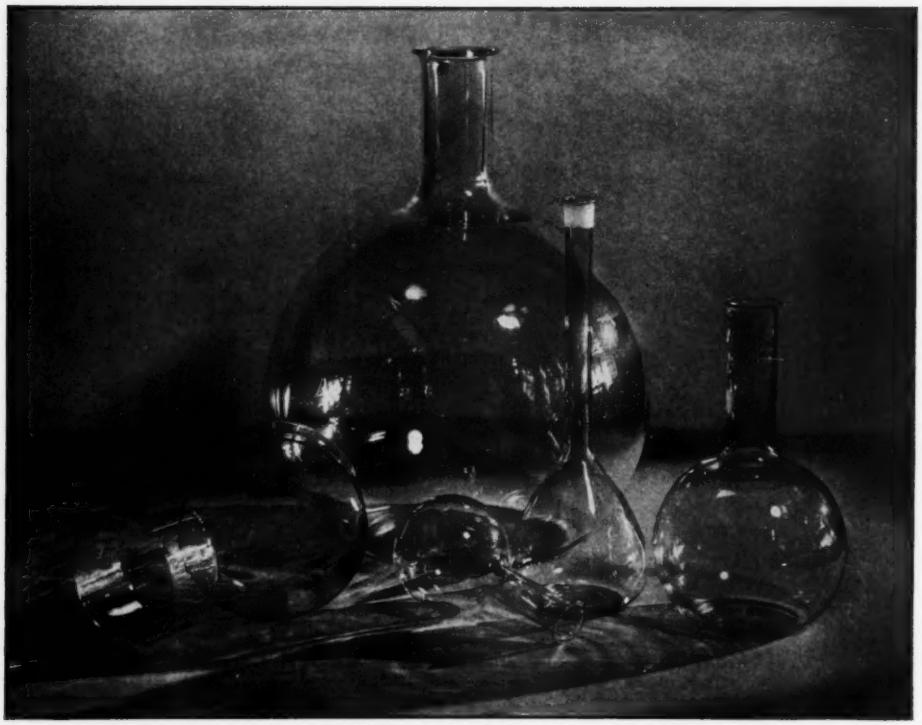

PHIALS

HIROMU KIRA, F.R.P.S.

SALONS: 1928—LONDON.

1929—LOS ANGELES, LANCASHIRE AND CHESHIRE, SAN DIEGO, DOUAI, COPENHAGEN, ELBEUF, IRISH, NEW WESTMINSTER, PARIS, DARWEN, GOTHENBURG, SCOTTISH NATIONAL SALONS.

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